Climate Manifesto

Policies to deliver action and justice

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The contents of this document will be updated on a regular basis.
Check the SCCS website for updates and for a searchable version of this document.
stopclimatechaos.scot

STOP CLIMATE CHAOS SCOTLAND

About Stop Climate Chaos Scotland

Stop Climate Chaos Scotland ("SCCS") is a diverse coalition of over 60 civil society organisations in Scotland who campaign together on climate change. Our members include environment, faith and belief groups, international development organisations, trade and student unions and community groups. We believe that the Scottish Government should take bold action to tackle climate change, with Scotland delivering our fair share of action in response to the Paris Agreement and supporting climate justice around the world.
https://www.stopclimatechaos.scot/

This document was brought together using input from across the Stop Climate Chaos Scotland coalition by Dr Richard Dixon, Environmental Consultant www.rdixon.scot

Foreword

From devastating droughts to catastrophic floods, the impact of the spiralling climate crisis could not be clearer, and those with the least responsibility for causing rising global temperatures are facing the most severe - and deadly - consequences.

A climate emergency was declared by governments in 2019 in response to years of campaigning and the massive upwelling of public concern, with one high profile example of this being the school strikes. Although this declaration raised awareness throughout society and business, it resulted in very little tangible new or accelerated action or policy by governments. For this emergency to be taken truly seriously we require a step up in action across every sector and at an accelerated scale and speed, with agreement around the solutions, public support for their implementation and more skills and expertise in specific sectors.

Relatively stretching national emissions reduction targets are in place after successful campaigning by SCCS and others in the lead up to the 2019 Climate Bill, and Scottish Government policy mentions climate change to the degree that it is in almost every other consultation. However, during the pandemic the climate emergency was very much on the back burner, and the 'green recovery' never materialised, resulting in only halting progress made since 2019. Where emissions have fallen, this has not been fast enough, and some sectors have barely seen any reductions since 1990 levels, leading to a series of damaging missed annual targets. Now the political focus has swung behind the cost of living crisis - brought about by dependence on the current fossil fuel energy system, a decade of austerity and the war in Ukraine - we risk further delays to delivering climate policies, at a time when their co-benefits would also address the cost of living crisis.

Yet, globally, scientists have sounded the alarm with ever-increasing urgency. Worryingly, at the same time, the independent experts charged with advising the UK and Scottish governments on their response to the climate crisis, have lambasted their lack of urgency and failure to deliver.

We need to recapture the focus on climate action as a priority. It is vital we embrace and accelerate action sooner rather than later, as investment now is essential if we are to achieve targets, and is also significantly more cost effective than delaying action (which the experts say could be up to 20 times more costly in purely financial terms).

As Lord Deben, the outgoing chair of the Committee on Climate Change, has said: *"our children will not forgive us if we leave them a world of withering heat and devastating storms where sea level rises and extreme temperatures force millions to move because their countries are no longer habitable. None of us can avoid our responsibility. Delay is not an option."*

As a climate movement, we must ourselves find ways to confront the scale, complexity and ubiquitous nature of the challenge. How do we drive rapid progress in every sector in a way that is fair to all? How do we add weight to our asks of governments at all levels? And how do we win over members of the public to the necessary change, to create the political space needed to implement the actions that are required at scale and at speed, while financing them in ways that are fair?

In short, how do we play our part in this crucial chapter in the journey towards net zero and beyond?

Only by being as consistent and as joined up as possible can we hope to succeed. We need to use our collective voice, backed up with our collective knowledge and know-how, as impactfully as possible. Whilst we have ambitious national targets, in order to deliver against them we need to push for action in every sector and at every level.

This manifesto of ideas is a contribution to that. It is our best attempt to bring together positive actions across the whole of Scottish society, which would help to deliver this necessary

transition. The policies within it have been identified at speed and they will undoubtedly evolve and deepen. New ideas will emerge. But it is an attempt to get firmly on the front foot. To identify what we think needs to happen. To empower everyone within the climate movement to make their voices heard. In doing so, it is a chance to regroup, to refocus and to re-energise our diverse movement for change so that, together, we confront this existential challenge. Now is the time to double down, not water down.

Mike Robinson, Chair, Stop Climate Chaos Scotland

Contents

Summary

The world is in a climate crisis. As the UN Secretary General, António Guterres, recently said: *'humanity is on thin ice — and that ice is melting fast.'* He called on the world's nations to *'massively fast-track climate efforts by every country and every sector and on every timeframe.'*

Scotland has been a global climate leader. But, while championing international action is welcome, it still needs to do much more to reduce emissions at home, to prepare for the climate that is coming, and to help less-well-off countries already suffering deep impacts.

We are off track to meet our climate targets and this document is a collection of proposals that could help us get back on track. It is a wealth of content for those revising Scotland climate plans. It is a wide-ranging set of plans for political party manifesto writers. And it is a mine of information for politicians trying to make the world a better place.

From farming to transport and from energy to our seas, the policies in this document cover vast swathes of the economy. They also show how to change the economy itself and they demand that we make our fair contribution to the rest of the world's efforts to cope with a changing climate. The policies in this document concentrate on reducing emissions but also touch on adaptation. And they outline how climate action can be paid for fairly by making polluters pay.

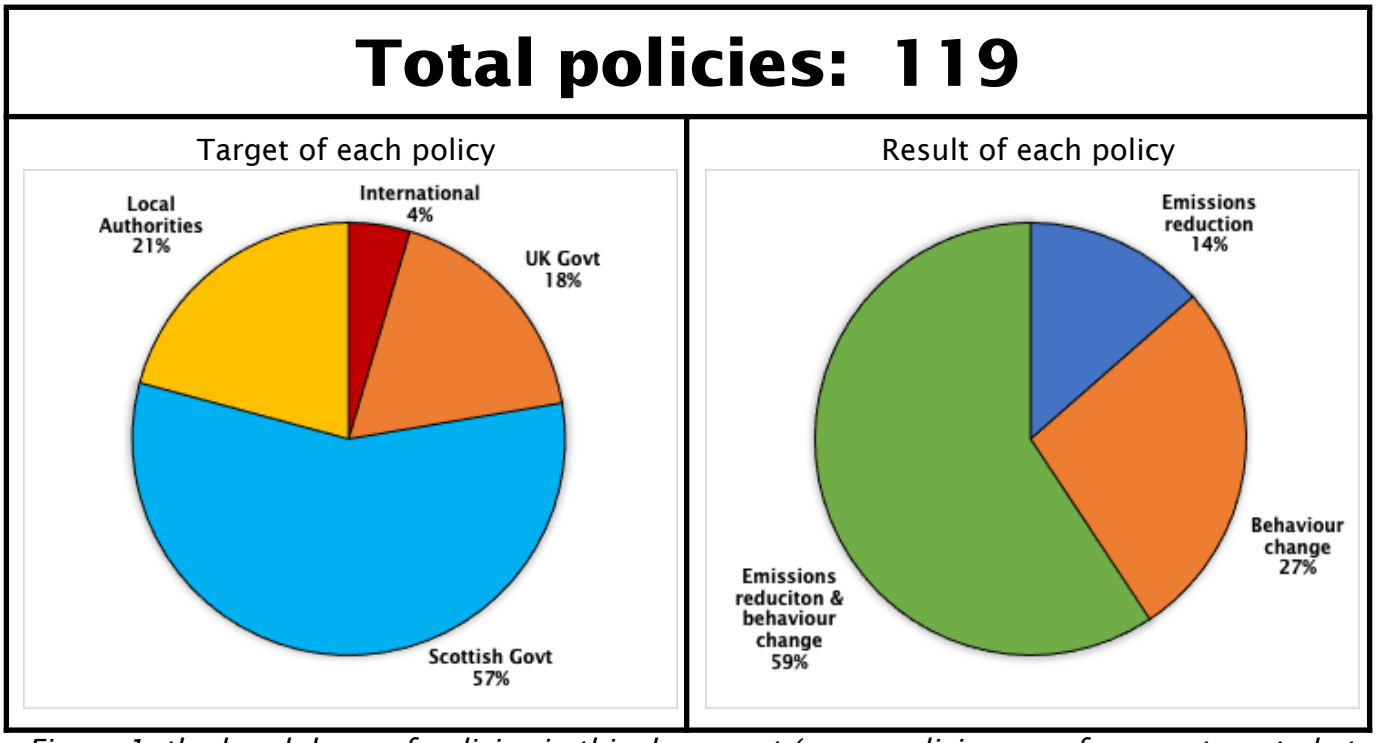


Figure 1: the breakdown of policies in this document (some policies are of course targeted at more than one level of government).

Most of the policies are for the Scottish Government, but some are for local authorities, some for the UK Government and some for the international community. Confronting the climate crisis will indeed require doing Guterres' *"everything, everywhere, all at once"* and even where the Scottish Government is not the prime mover of an issue, it can influence, incentivise and persuade, a role that it must perform from a position of domestic credibility.

Some policies would directly bring about emissions reductions, some would help to enable behaviour change towards those that are pro-climate by making these choices more affordable and accessible, and some would do both.

Some of the policies in this document could be put in place tomorrow, some quite quickly and some are ideas that need working through with experts and stakeholders.

For some ideas, there is an obvious upcoming opportunity for change – for instance, re-orienting agricultural subsidies through the Agriculture Bill or introducing further producer responsibility schemes through the Circular Economy Bill.

Certain measures would obviously fit well together – for instance, Workplace Parking Levies could help fund Free Public Transport.

Of course, there has already been good progress in a number of areas and SCCS would want to see positive policies maintained and used as a springboard for action at a truly transformative scale. Examples include climate targets, the climate plan process, the ban on fracking, the transformation in how electricity is generated, the 20% car-kms reduction target.

SCCS members, together as the coalition and separately, will be advocating for these policies to political parties, through Scottish Government processes and to the wider public. Those who are part of international networks will also be promoting them there as well.

1. Introduction

This climate manifesto of policy proposals has been drawn together from across the Stop Climate Chaos Scotland coalition's 60+ diverse members, with additional input from other Scottish groups and networks. The document's ambition is shared by every SCCS member, large and small, and it represents the most comprehensive set of climate change policies ever assembled by civil society in Scotland.

Adopting the policies in this document would put Scotland on track to deliver the real reductions in climate change that the planet needs and to make our fair contribution to helping other countries deal with climate change in their own ways.

The Scottish Government has acknowledged the twin climate change and nature emergencies. In the last 15 years the Scottish Parliament has passed two climate acts, both with tough emissions reduction targets and the Scottish Government has called this time - the 2020s - the 'decade of delivery' on climate change.[1] The Climate Justice Fund has also been helping people in Malawi, Rwanda and Zambia to adapt to the changing climate for more than a decade, and now seeks to support action to address the losses and damages created as a consequence of rising temperatures.

But, on too many fronts, we are not delivering. We are missing our annual targets and the Scottish Government's own monitoring shows we are off track for our 2030 and 2045 targets, with nine out of 43 outcome indicators off track and a further 13 classified as 'too early to tell.' Overall, less than half of all these indicators are definitively on track.[2]

The world has but little time to avoid the worst consequences of climate change. At the time of writing we have record heatwaves in southern Europe and the US, following on from April temperatures in Spain, Portugal, Morocco and Algeria reaching those expected only in July and August, and wildfires burning across massive areas of Canada polluting the eastern USA, the hottest days ever in Laos, Thailand and Vietnam and the sea ice around Antarctica at a record low – a record only set last year. Temperatures in the UK have topped 40 degrees Celsius for the first time, and Scotland experienced its warmest ever June.

[1] Cabinet Secretary Michael Matheson at launch of Energy Strategy and Just Transition Plan at COP26, November 2021.

[2] Climate Change Plan Monitoring Reports 2023, Scottish Government, May 2023, https://www.gov.scot/binaries/content/documents/govscot/publications/progress-report/2023/05/climate-change-monitoring-report-2023/documents/climate-change-plan-monitoring-reports-2023/climate-change-plan-monitoring-reports-2023/govscot%3Adocument/climate-change-plan-monitoring-reports-2023.pdf

Meanwhile the long-running drought in Eastern Africa - one that scientists say would not have happened without climate change - has left over 40 million people facing severe hunger in Kenya, Ethiopia, Somalia, Uganda and South Sudan[3] and the clean up continues from 2022's summer floods in Pakistan, estimated to have cost more than $43bn and affected 33 million people.

The World Meteorological Organisation recently warned that the world is likely to breach the crucial 1.5ºC temperature threshold, albeit temporarily, in the next few years,[4] driven by the current El Niño warming phenomenon.

The 2023 IPCC Synthesis Report stressed the rapidly closing window of opportunity to keep the world below the 1.5ºC threshold of the most dangerous levels of heating. The UN Secretary General António Guterres said we need to do *"everything, everywhere, all at once"* to reduce emissions[5], and called for all developed economies to aim for net zero by as close as possible to 2040. Scotland has already made large reductions in emissions and has more ambitious targets than many other countries, so it is reasonable to expect that Scotland could heed these calls and could be among the first nations to commit to a target of net zero by 2040 at the latest. This more ambitious target would also help ensure that our climate action to reduce emissions is more proportionate to Scotland's fair share of historical emissions.[6] However, this should not distract from the strong delivery needed to meet the 2030 target.

[3] Hunger in East Africa to hit new peak with one person likely to die every 28 seconds despite G7 pledge to end famine, Oxfam, May 2023, https://oxfamapps.org/scotland/2023/05/17/hunger-in-east-africa-to-hit-new-peak-with-one-person-likely-to-die-every-28-seconds-despite-g7-pledge-to-end-famine/

[4] World likely to breach 1.5C climate threshold by 2027, scientists warn, Guardian, May 2023, https://www.theguardian.com/environment/2023/may/17/global-heating-climate-crisis-record-temperatures-wmo-research?CMP=share_btn_tw

[5] Secretary-General Calls on States to Tackle Climate Change 'Time Bomb' through New Solidarity Pact, Acceleration Agenda, at Launch of Intergovernmental Panel Report, UN, March 2023, https://press.un.org/en/2023/sgsm21730.doc.htm

[6] The 'Fair Shares' methodology is rooted in the science of carbon budgets and the principles of equity under the UNFCCC, see for example, Climate Fair Shares, FoE International, https://www.foei.org/what-we-do/climate-justice-and-energy/climate-fair-shares/

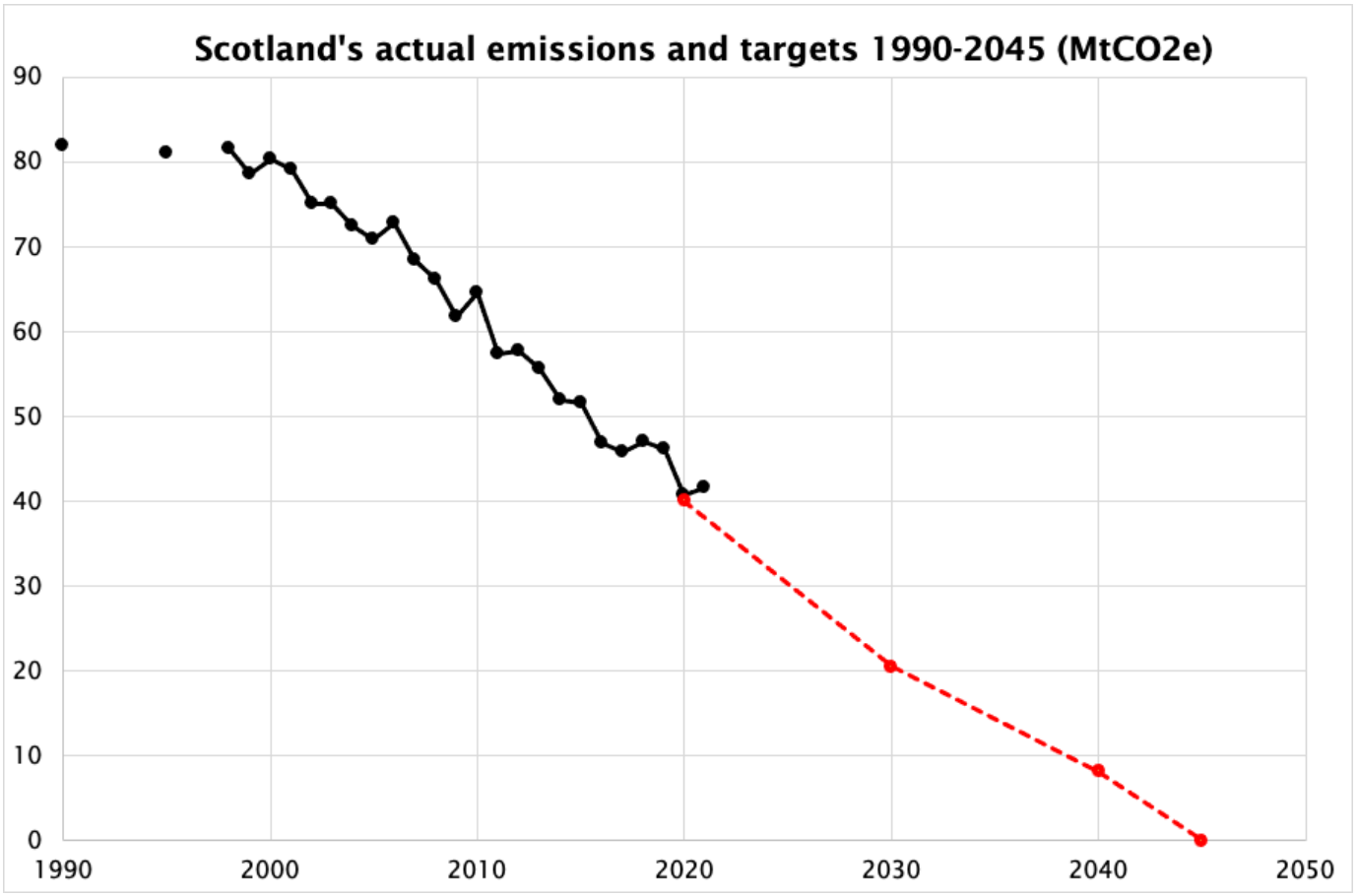


Figure 2: Scotland's greenhouse gas emissions as reported up to 2021 and our targets from the 2019 Climate Act[7]

All countries, but particularly rich, industrialised nations who caused and continue to deepen the climate crisis, must do more to limit temperature rises, and the damage they create - every fraction of a degree of warming will be counted in lives ruined or lost.

Scotland must build on its strong international reputation on climate change and play its full part in this global effort. But to do so from a position of credibility, Scotland needs to do much more - more to deliver on what has already been promised and more to increase our ambition further. It must confront this challenge in ways that realise its commitments to climate justice - justice for those impacted by the damage our emissions are creating, and justice in the way we reduce our emissions, including protecting those on low incomes and making polluters pay for their pollution.

Ensuring delivery of domestic commitments needs faster and stronger activity under the existing plans. Our plans should also link the Scottish Government's work on domestic and international issues, providing a comprehensive and credible policy platform on climate change, as well as addressing the climate impacts of our imports and exports. In driving a Just Transition away from fossil fuels, Scotland must make sure that policies and programmes simultaneously address poverty and inequality, in Scotland and overseas. After all, the climate crisis is caused by inequality; it's causing more inequality; and the response to it could – if not purposefully designed to be just and equitable – entrench inequality.

[7] Scottish Greenhouse Gas Statistics 2021, Scottish Government, 2023, https://www.gov.scot/binaries/content/documents/govscot/publications/statistics/2023/06/scottish-greenhouse-gas-statistics-2021/documents/scottish-greenhouse-gas-statistics-2021/scottish-greenhouse-gas-statistics-2021/govscot%3Adocument/scottish-greenhouse-gas-statistics-2021.pdf

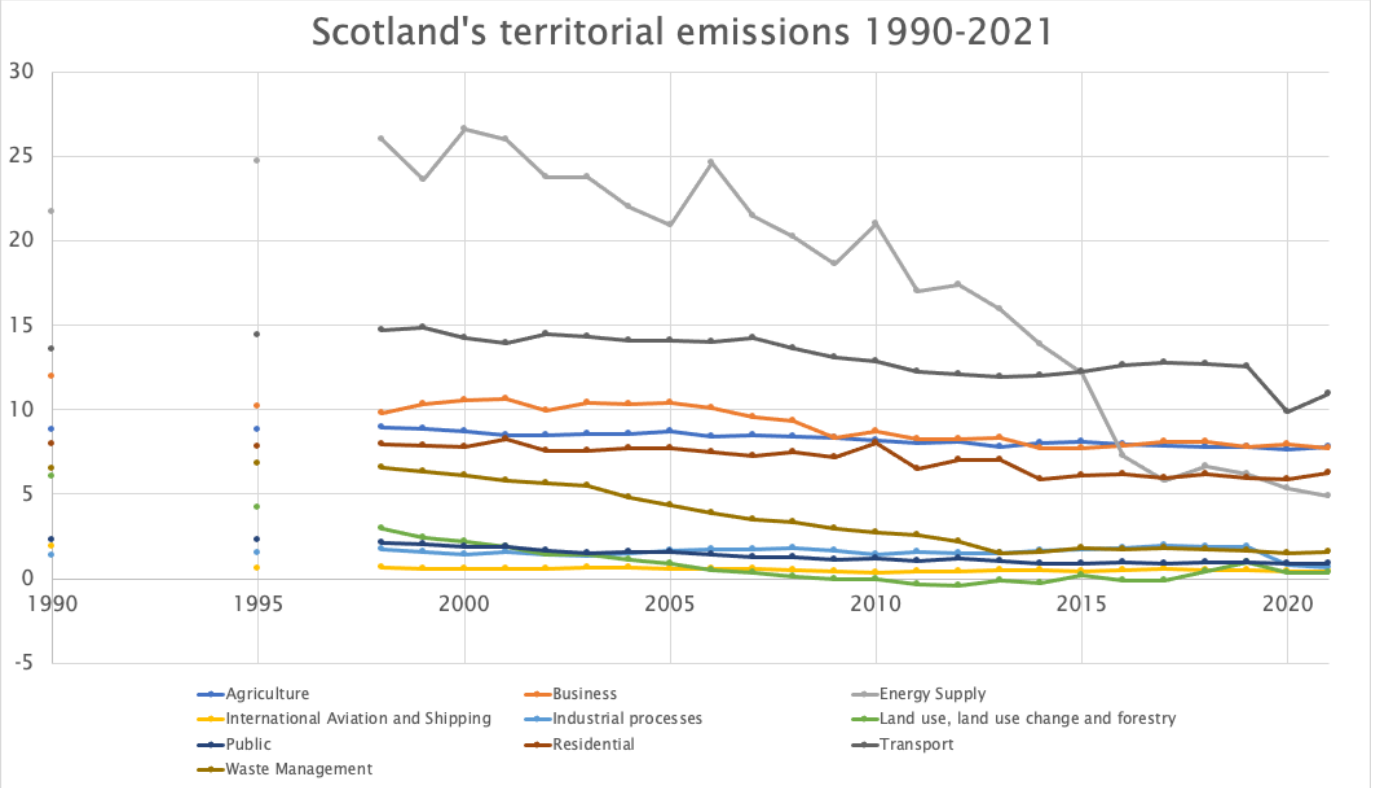


Figure 3: historical emissions from activity in Scotland by sector plus international aviation and shipping, in millions of tonnes of carbon dioxide equivalent ($MtCO_2e$) [8]

As well as protecting us from some of the challenges a changing climate brings, adopting these policies would also help create jobs, boost the economy and make our society fairer and healthier.

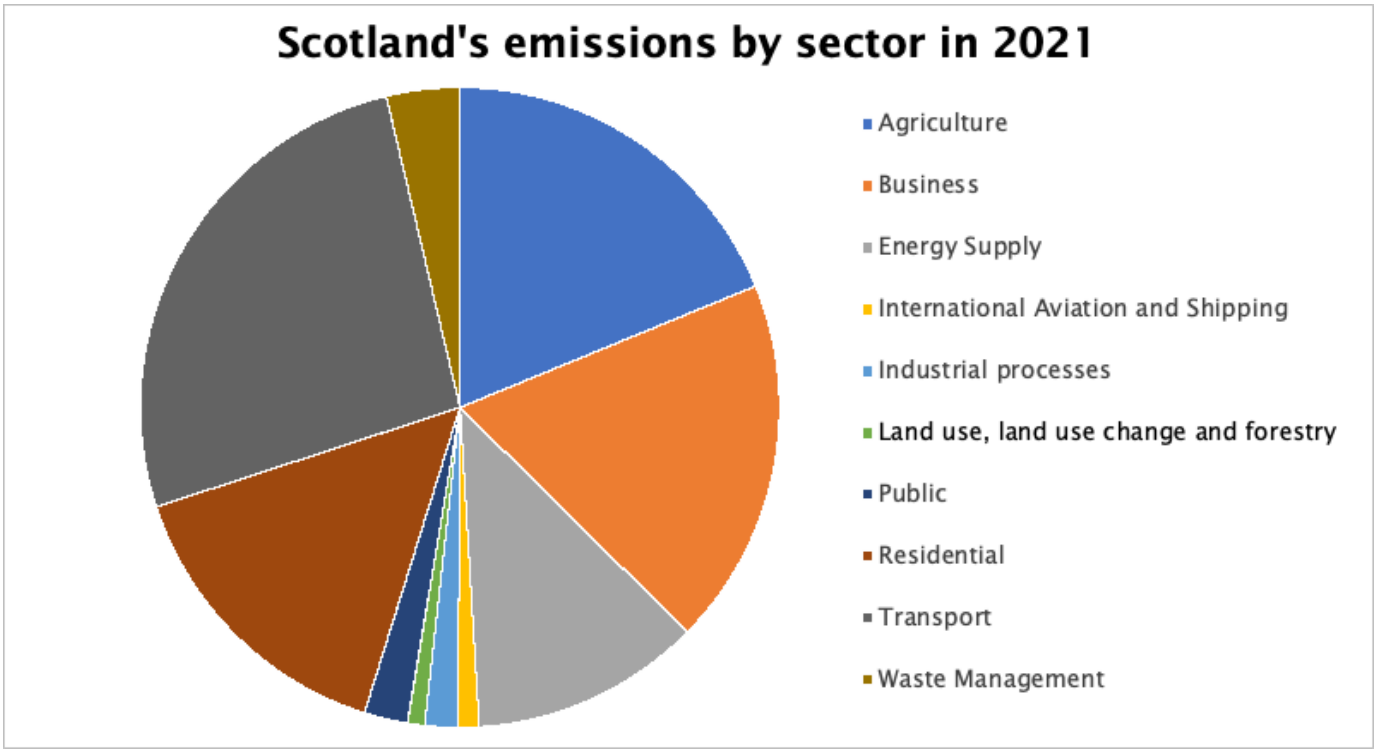


Figure 4: where Scotland's emissions came from in 2021.

[8] Scottish Greenhouse Gas Statistics 2021, Scottish Government, 2023, https://www.gov.scot/binaries/content/documents/govscot/publications/statistics/2023/06/scottish-greenhouse-gas-statistics-2021/documents/scottish-greenhouse-gas-statistics-2021/scottish-greenhouse-gas-statistics-2021/govscot%3Adocument/scottish-greenhouse-gas-statistics-2021.pdf

Early and extensive public engagement is essential to communicate the benefits of climate action and ensure that new policies are understood and well received.

These proposals are not motivated by dogma: they are instead driven by the need to confront an existential threat in ways that address the deep injustices at the heart of this crisis.

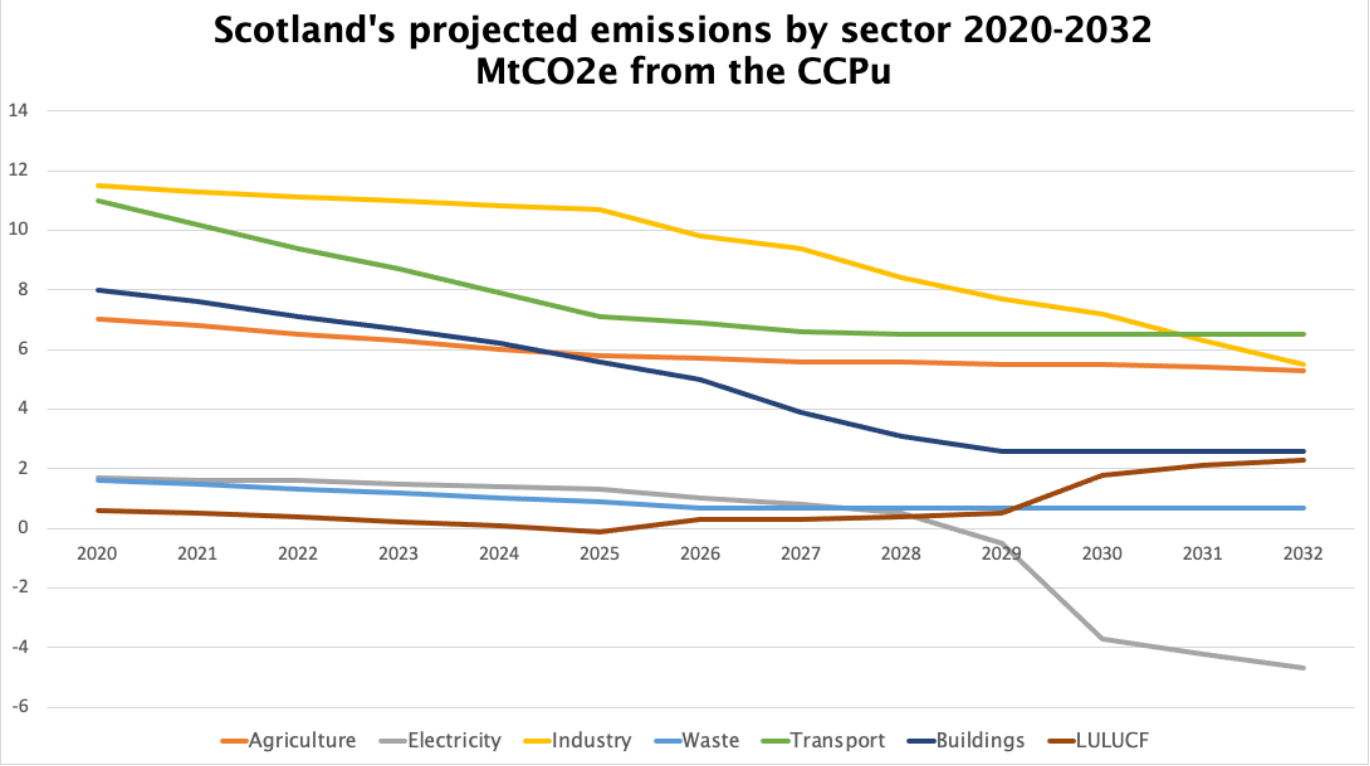
We urge decision makers at every level to support the policies in this document so that, together, we can address the climate emergency with the urgency it requires.

2. Cross-cutting policies

The following chapters discuss our international obligations, economic policy and the change needed in each sector of the economy. This chapter looks at the overarching considerations that should govern action on climate change - from the level of our ambition on emissions reduction to the need to include every group in society.

A vital part of this overarching framework are the four EU environmental principles - the precautionary principle, the principle that preventive action should be taken, the principle that environmental damage should, as a priority, be rectified at source and the principle that the polluter should pay.[9] The polluter pays principle is particularly relevant for this collection of policies, since the transition to a zero-carbon society should be paid for mostly by those who have created the climate crisis. The Scottish Government is committed to continuing to observe these principles.[10]

An issue which comes up several times in the following chapters is public-ownership of key services, whether this is municipal bus companies or a publicly-owned energy company. For these kinds of essential services, SCCS is generally of the view that a public-service motivation is more likely to succeed than a profit motivation (see chapter 12, Public Sector).



[9] Guiding principles on the environment: draft statutory guidance. Scottish Government, 2021, https://www.gov.scot/publications/guiding-principles-environment-draft-statutory-guidance/pages/4/

[10] For example, Guiding principles on the environment: draft statutory guidance, Scottish Government, 2021, https://www.gov.scot/publications/guiding-principles-environment-draft-statutory-guidance/pages/4/

Figure 5: the trajectory defined for each sector by the 2020 Climate Change Plan Update.[11]

2.1 Policies

2.1.1 Scotland's targets

Deliver on current climate plans

The Scottish Government must deliver on the policies in the current climate plan, and over deliver to make up for the failure of carbon capture to become operational during the current plan period.

☐	International focus	☐	UK Government focus	☑	Scottish Government focus	☑	Local Authority focus
☑	Delivers emissions reduction			☐	Delivers behaviour change		

The current Climate Change Plan runs to 2032. We have missed four of the last five annual targets. The Scottish Government's own monitoring[12] and the analysis of the Committee on Climate Change[13] show that delivery is off track and we will continue to miss our annual targets without further action. 9 out of 43 Scottish Government outcome indicators are off track and a further 13 are classified as 'too early to tell.' Overall, less than half of all these indicators are definitively on track.

A large part of this failure is the admission that carbon capture and storage will not be operational at a meaningful scale until well into the 2030s, if at all, which means that installation of energy efficiency measures and renewable energy capacity must go faster to compensate.

Top priority must be to deliver on the policies in the plan, over delivering on some to compensate for gaps, and ensure that the next Climate Change Plan is a credible, comprehensive and clearly explained set of policies to meet all our future targets, without relying on unproven Negative Emissions Technologies.

For further information:
Stop Climate Chaos Scotland reacts to the latest Climate Change Committee report on emissions reductions in Scotland, SCCS, December 2022,
https://www.stopclimatechaos.scot/media-statement/
See also policy 'Don't rely on Negative Emissions Technologies for emissions reductions' in the Energy chapter.

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[11] Climate change plan update, Scottish Government, 2020, https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2020/12/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/documents/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/govscot%3Adocument/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero.pdf p 221 et seq

[12] Climate Change Plan Monitoring Reports 20223, Scottish Governement, May 2023, https://www.gov.scot/binaries/content/documents/govscot/publications/progress-report/2023/05/climate-change-monitoring-report-2023/documents/climate-change-plan-monitoring-reports-2023/climate-change-plan-monitoring-reports-2023/govscot%3Adocument/climate-change-plan-monitoring-reports-2023.pdf

[13] Progress reducing emissions in Scotland – 2021 Report to Parliament, Climate Change Committee, 2021, https://www.theccc.org.uk/publication/progress-reducing-emissions-in-scotland-2021-report-to-parliament/

Introduce consumption emissions targets

The Scottish Government should introduce statutory, science-based annual targets to significantly reduce Scotland's consumption-based emissions, and use the Circular Economy Bill and future Climate Change Plans to detail the measures it will take to achieve them.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

While Scottish Ministers are required to report on emissions attributable to Scottish consumption of goods and services, no targets to reduce these emissions currently exist.

Yet emissions from imported products and services make up a substantial share of Scotland's carbon footprint, and this share is likely to grow as Scotland's domestic emissions fall. Including our demand for goods from overseas, our total climate footprint, or consumption emissions, only reduced by about 24% between 1998 and 2019, and our total carbon footprint is about 70% larger than our territorial emissions.[14]

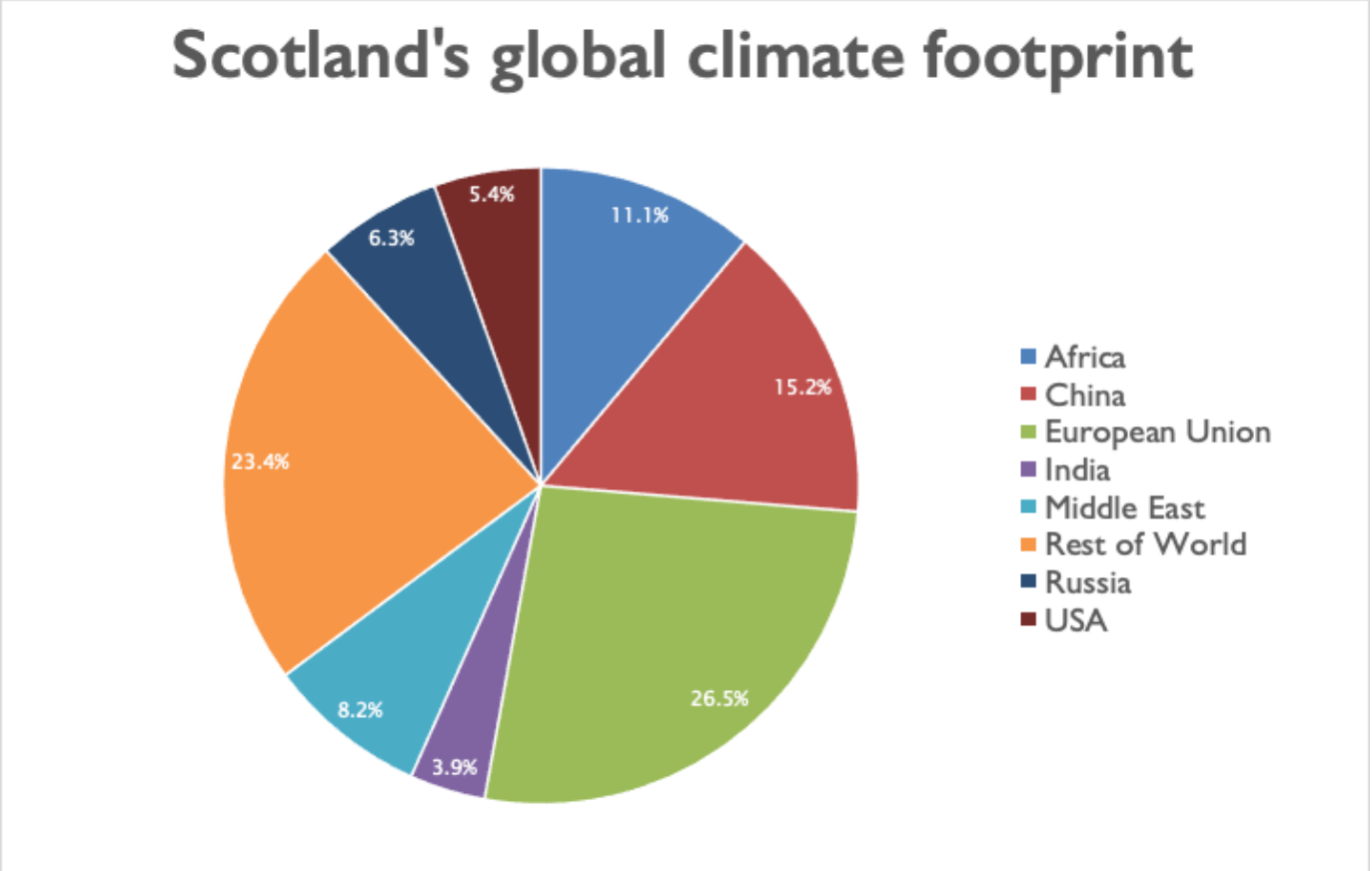

Figure 6: where emissions embedded in imports to Scotland came from in 2019 (excluding the 37% which comes from the rest of the UK). [15]

[14] Scotland's Carbon Footprint: 1998-2019, Scottish Government, 2023, https://www.gov.scot/news/scotlands-carbon-footprint-1998-2019/

[15] Scotland's Carbon Footprint: 1998-2019, Scottish Government, 2023, https://www.gov.scot/news/scotlands-carbon-footprint-1998-2019/

The target setting powers included in the Circular Economy Bill[16] currently before the Scottish Parliament should be used to introduce consumption-based targets. As a minimum, these should align with the domestic emissions targets for 2030, 2040 and 2045.

Also largely ignored are the impacts of waste exports, including any recycling happening overseas, currently about 17% of all Scottish recyclate. Waste exports from Scotland increased by 40% between 2012 and 2021.[17]

This policy would have co-benefits for nature protection and restoration.

For further information:
Scottish Environment Link, Guide to responding to the Circular Economy Consultations, July 2022,
https://www.scotlink.org/wp-content/uploads/2022/07/Responding-to-the-Circular-Economy-Consultations.pdf
Call for a Strong Circular Economy Bill for Scotland Page 8, Scottish Environment LINK, 2022,
https://www.scotlink.org/wp-content/uploads/2022/04/CE-Bill-call-for-April-2022-FINAL-1.pdf
The case for consumption-based targets, FoE Scotland, 2022,
https://foe.scot/resource/the-case-for-consumption-based-targets/
Financing Climate Justice,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf
See also the related policy 'Carbon and material consumption reduction targets' in the Waste and Circular Economy chapter.

2.1.2 Climate-friendly Governance

Robust scrutiny of law, policy and practice to ensure it is fully consistent with sustainable development

Ensure systematic scrutiny of all government legislation and activity using a Policy Coherence for Sustainable Development (PCSD) approach (through sustainable development impact assessments, redefining parliamentary committee remits, etc)

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

MSPs and the Scottish Parliament must take a prominent role to ensure better policy coherence, and all political parties in the parliament should prioritise this in discussions with the Scottish Parliament Corporate Body.

All new bills and legislation should be assessed through a sustainable development lens. Existing tools can be of use, such as the parliament's own Sustainable Development Impact Assessment Tool developed by the Scottish Parliament Information Centre (SPICe).[18]

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[16] Circular Economy (Scotland) Bill, Scottish Parliament, 2023,
https://www.parliament.scot/-/media/files/legislation/bills/s6-bills/circular-economy-scotland-bill/introduced/bill-as-introduced.pdf

[17] From SEPA figures:
https://www.sepa.org.uk/environment/waste/waste-data/waste-data-reporting/waste-data-for-scotland/

[18] Sustainable Development Scrutiny page, Scottish Parliament,
https://www.parliament.scot/chamber-and-committees/research-prepared-for-parliament/sustainable-development-scrutiny

This tool highlights cross-cutting issues and unintended consequences, and could help to mitigate against individual Scottish Parliament committees working in silos, thus supporting the delivery of policy coherence across devolved policy and practice. However, it is not currently being routinely used in committee scrutiny.

Parliamentary committees should also align their remits to both the Sustainable Development Goals (SDGs) (and targets) and the Scotland-level national outcomes within a strengthened National Performance Framework (NPF) to improve understanding of where responsibility to achieve the SDGs lies, and where interactions between these outcomes exist.

Finally, the parliament must commit to holding regular debates on SDG and NPF progress and implementation, and conduct an independent annual review to hold the Scottish Government to account on its commitment to achieving the SDGs. This work should build on the 2020 landmark report on SDGs published by the Scottish Government.[19]

For further information:
2021-2026 Policy Priorities for Scotland, SIDA, 2021,
https://www.intdevalliance.scot/how-we-help/2021-scottish-election

An ambitious and impactful Wellbeing and Sustainable Development Act

Deliver the promised Wellbeing and Sustainable Development Act to make all public bodies set objectives towards sustainable development outcomes, ensuring that they impact positively on people and the environment in Scotland and in low-income countries, and create a legal requirement for meaningful public participation in the democratic process and decision making by building on existing requirements for public participation under the Community Empowerment Act 2015 and, crucially, enshrining the role and remit of the Citizens' Assembly into law.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The Scottish Government should use the proposed Wellbeing and Sustainable Development Bill to enshrine a statutory requirement for all future Scottish Governments to align budgets to sustainable development objectives. The Bill should create: clear definitions for key terms, such as 'sustainable development'; clarify and strengthen duties on public bodies for delivering the national outcomes; and require the creation of national outcome delivery plans and annual progress reports.

All future economic strategies should also be underpinned by long-term sustainable development objectives, never short-term GDP growth for growth's sake, regardless of how inclusive that growth might be.

The Scottish Government should also use the Bill to introduce an independent Wellbeing and Sustainable Development or Future Generations Commissioner to support implementation of the Act. Such a Commissioner would:

- be placed on a statutory footing as part of the Bill to signal the importance the Government places on sustainable development and the wellbeing of current and future generations
- provide a space for learning to coalesce
- help build the capacity of public bodies and support them to understand and implement duties relating to sustainable development and the delivery of the National Outcomes

[19] Scotland and the sustainable development goals: a national review to drive action, Scottish Government, 2020, https://www.gov.scot/publications/scotland-sustainable-development-goals-national-review-drive-action/

- monitor the implementation of sustainable development duties through scrutiny and investigative power
- assess delivery of the National Outcomes and address the implementation gap
- be an ambassador to engage the wider public, and provide advice and scrutiny to the Scottish Government

Above all, the creation of a new Commissioner would support a shift towards long-termism in policy making. Current political structures reward short-term policy interventions, even when they incur future costs, on health, the environment and so on. By bringing a future generations lens to decision making, a Commissioner could help to embed the principles of long-termism, and as such should be seen as an investment in prevention, not a cost.

For further information:
Towards a Wellbeing and Sustainable Development Bill, Scotland's International Development Alliance, 2022, https://www.intdevalliance.scot/how-we-help/policy-and-advocacy/wsd-bill
National Outcomes Review 2023: Response to Call for Evidence, Oxfam Scotland, May 2023, https://oxfam.app.box.com/file/1225834059244?s=nogb55ytbl5jhgrxukps5pas8go4m2fx
Sarah Boyack MSP's proposed member's bill and the responses to it provide useful prompts on many key issues.

Meaningful community engagement and empowerment

The Scottish Government and public bodies need to engage communities in meaningful participatory processes, especially about adaptation.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Communities, where the cost of living crisis, poverty, exclusion, food insecurity and the ever increasing severity of climate based consequences, combine, are often best placed to take local action for the mitigation of climate change and for adaptation to the impacts. Rural and island communities have additional challenges, including more severe weather, very significant levels of fuel poverty and more fragile supply chains for food and other essential goods and services.

Within this context, genuinely empowering communities with both practical support and funding is vital. Too often, despite statutory recognition, community engagement is equated with informing, simplistic messaging, 'being the parent' or 'doing to', whereas supporting meaningful engagement and genuine bottom up, community based responses and empowerment is a very different thing.

The Scottish Government's funding of a network of climate hubs[20] recognises the value of place-based, community-level responses, and as such, securing adequate funding for both community groups and the new climate hubs is important. This funding needs to be on a sufficiently long-term basis to allow communities and hubs to offer good, secure jobs and to plan and implement programmes for both mitigation and adaptation.

As is well reported,[21] those living in Scotland will be increasingly impacted by gales, flooding, wildfires and coastal erosion, with losses of livelihood and internal displacement an inevitability.

[20] Climate Change - Community-led climate action, Scottish Government, 2023, https://www.gov.scot/policies/climate-change/climate-challenge-fund/#:~:text=The%20two%20pathfinder%20hubs%2C%20pathfinder,million%20in%202023%20to%202024

[21] For instance, Impacts in Scotland, Adaptation Scotland, 2023,https://adaptation.wm7.datasouth.net/why-adapt/impacts-scotland

How to support those losing homes and livelihoods is key, as is recognising and mitigating the personal tragedies involved, from unsellable homes due to new flooding risks to the significant areas of the Western Isles which will be lost to flooding and coastal erosion.

Food insecurity will also increase, as crops and animals are lost or harmed by extreme weather, animal pathogens change; the fish move further further away into cooler waters and Scottish farmland is lost from agriculture, through off-setting and forestry plantations. A loss which will last generations, due to the difficulty of returning root tangled, clear cut forestry land to either pasture or plough-able land.

The Scottish Government has an adaptation programme[22] which fully recognises the need for increasing the resilience of communities, however as the Climate Change Committee has reported, progress on delivery has stalled.[23] The same report goes on to say that there are good local level initiatives, and that fairness within adaptation is just as important as fairness elsewhere. Audit Scotland also highlighted the low priority adaptation has had and its importance in its recent report.[24]

The adaptation programme is due to be revised in 2024 and it is important that the Scottish Government re-energises the programme, designing responses through participatory processes with impacted communities and empowering those communities.

For further information:
Adaptation Scotland home page, https://www.adaptationscotland.org.uk
See also the 'Decarbonising the public sector' policy in the Public sector chapter.

Proactively tackle climate, poverty and inequalities together

Action to reduce Scotland's emissions should be pursued in ways that actively reduce poverty and narrow existing inequalities, including gender, disability and racial injustice, with the impact of all relevant strategies and plans transparently assessed.

☑	International	☑	UK Govt	☑	Scottish Govt	☑	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Currently, there is inadequate assessment of the impact of climate policies on inequalities. However, we welcome the Scottish Government's commitment to carry out an Equalities Impact Assessment on the new Climate Change Plan and Energy Strategy when they are published in November 2023.[25] This improved level of assessment should lead to a new approach to climate action in Scotland, one in which, wherever possible, activities to reduce emissions should also reduce poverty and inequalities - recognising these are incompatible with a climate just future.

[22] Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme 2019-2024, Scottish Government, 2019, https://www.gov.scot/publications/climate-ready-scotland-second-scottish-climate-change-adaptation-programme-2019-2024/documents/

[23] Is Scotland climate ready, Committee on Climate Change, 2022, https://www.theccc.org.uk/wp-content/uploads/2022/03/CCC-Is-Scotland-climate-ready-Recommendations.pdf

[24] Government must improve climate set up, Audit Scotland, April 2023, https://www.audit-scotland.gov.uk/news/government-must-improve-climate-set-up

[25] CASE/631205: Climate Change Plan (CCP) & Just Transition Planning (JTP) Impact Assessments, Public Contracts Scotland, 2023, https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=APR476295

However, the Scottish Government could go further and carry out an Equalities and Human Rights Impact Assessment (EQHRIA),[26] that is, adding a human rights lens. This is more person centred, and captures intersectionality and lived experience.

Where climate action can exacerbate existing inequalities - for example through increased costs incurred to low-income households for decarbonising heat in buildings - these policies must be part of a package of fiscal measures that support low-income households to maintain or increase their overall household income. Regressive impacts must be identified and proactively mitigated against.

This policy involves a broadening of the definition of 'Just Transition' to ensure that the shift to a sustainable economy and society is achieved in ways that support the wider goals of ending poverty and narrowing inequalities.

For further information:
Equality Impact Assessments - Briefing from the UK Women's Budget Group on equality impact assessments and the Public Sector Equality Duty, UK Women's Budget Group, 2019, https://wbg.org.uk/wp-content/uploads/2019/10/EIA-2019.pdf
Assessing impact and the Public Sector Equality Duty: a guide for public authorities (Scotland), EHRC, 2016, https://www.equalityhumanrights.com/en/publication-download/assessing-impact-and-public-sector-equality-duty-guide-public-authorities

Recognise a human right to a healthy environment

Create a statutory right to a healthy environment in the proposed Scottish Human Rights Act.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The Scottish Government has committed to pass a Human Rights (Scotland) Act in this term of Parliament. The government's National Taskforce for Human Rights Leadership recommended including a human right to a healthy environment. A 'safe climate' should be included as a key substantial element.

Following a recent high-level conference, the Council of Europe is looking at how to include the right to a 'clean, healthy and sustainable environment' as an additional protocol of the European Convention on Human Rights or as a separate convention.[27] The Scottish Government has recently launched proposals for a Scottish Human Rights Bill - positively, this includes the intention to include a right to a healthy environment.[28]

The human right to a healthy environment has two dimensions: substantive and procedural. The National Taskforce for Human Rights Leadership recommended inclusion of both dimensions of the right in future human rights laws in order for that right to be fully realised.

The substantive elements of human right to a healthy environment have been articulated by the UN Special Rapporteur on human rights and the environment and include *'the right to clean air,*

[26] Equality and human rights impact assessments guidance, Scottish Human Rights Commission, undated, http://eqhria.scottishhumanrights.com/

[27] Advancing the right to a clean, healthy and sustainable environment in Europe, Council of Europe, May 2023, https://www.coe.int/en/web/portal/-/advancing-the-right-to-a-clean-healthy-and-sustainable-environment-in-europe

[28] A Human Rights Bill for Scotland: Consultation, Scottish Government, June 2023, https://www.gov.scot/binaries/content/documents/govscot/publications/consultation-paper/2023/06/human-rights-bill-scotland-consultation/documents/human-rights-bill-scotland-consultation-june/human-rights-bill-scotland-consultation-june/govscot%3Adocument/human-rights-bill-scotland-consultation-june.pdf

safe climate, access to safe water and adequate sanitation, healthy and sustainably produced food, non-toxic environments in which to live, work study and play, and a healthy biodiversity and ecosystem.'[29] This is currently not protected by human rights laws in Scotland.

The procedural elements of the human right to a healthy environment are enshrined in the UN Economic Commission for Europe Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (the Aarhus Convention) and comprise of: (i) access to environmental information; (ii) public participation in environmental decision-making; (iii) environmental and socio-cultural assessments; (iv) and access to justice in environmental matters and effective remedies.[30]

The UK's ratification of the Aarhus Convention means that Scotland is obliged to implement the procedural elements of the human right to a healthy environment. However, Scotland has not properly implemented it. The Convention's decision-making bodies have repeatedly found the Scottish legal system, and judicial review in particular, to be prohibitively expensive, violating the Convention's provisions on access to justice.[31] A communication currently under review by the Aarhus Convention's Compliance Committee alleges a further breach in relation to the lack of substantive review of environmental laws in Scottish courts.[32]

The recognition and realisation of a human right to a healthy environment, defined according to best practice, would support and underpin other environmental objectives, enabling better decision-making for the environment, with litigation only being used as a last resort.

For further information:
The Substantive Right to a Healthy Environment: A review of definitions, standards and enforcement mechanisms, Environmental Rights Centre, July 2023, https://www.ercs.scot/wp/wp-content/uploads/2023/07/The-Substantive-Right-to-a-Healthy-Environment_June-23_online.pdf
A Human Right to a Healthy Environment must be included in a new Human Rights (Scotland) Act, Environmental Rights Centre Scotland, 2021, https://www.ercs.scot/wp/wp-content/uploads/2021/04/March-21-HRHE-Briefing-Summary-ERCS-LINK.pdf
Human Rights (Scotland) Bill, Environmental Rights Centre Scotland, 2023, https://www.ercs.scot/our-work/human-right-healthy-environment/
Human right to a healthy environment, Environmental Rights Centre Scotland, 2023, https://www.ercs.scot/our-work/

Establish an environmental court or tribunal

Establish a specialist environmental court or tribunal in Scotland to ensure public access to justice in environmental matters.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Scotland needs a dedicated environment court or tribunal (ECT) to offer an appropriate judicial route to a remedy for environmental matters. Such a one stop shop would address the gaps existing in environmental governance in Scotland, both pre-existing and now evident following the UK's exit from the European Union (EU), separation from the EU institutions, and the loss

[29] Right to a healthy environment: Good practice, UNHRSP/UNEP/Boyd, May 2020, https://wedocs.unep.org/handle/20.500.11822/32450

[30] Note that the UK has tried to opt out of the third of these: "environmental and socio-cultural assessments"

[31] Access to justice on the environment, and whether Scotland is providing it, Environmental Rights Centre Scotland, 2021, https://www.ercs.scot/wp/wp-content/uploads/2021/10/Access_to_environmental_justice_Sept21-v4.pdf

[32] Complaint to the Aarhus Convention Compliance Committee, 2017, https://unece.org/fileadmin/DAM/env/pp/compliance/C2018-156/Communication_UK_RSPB_07.12.2017.pdf

both of oversight by the EU Commission and access to the determination of the European Court of Justice. It would also help to address Scotland's failure to comply with its duties under the Aarhus Convention (see policy on 'Human right to a healthy environment').

The four main reasons why an ECT is needed:

- environmental litigation is unaffordable – a situation which is in contravention of the Aarhus Convention. An ECT could be designed to ensure litigation is affordable and to improve access to justice. This is particularly necessary for marginalised communities. For example, ethnic minorities are more likely to live in poverty and be on lower incomes but are also more likely to live in urban areas where there is increased potential for infringement of environmental rights, for example, polluted air or noise pollution from motorways
- certain types of environmental litigation do not allow the courts to consider whether the substance of a law has been violated. This is the subject of an outstanding 'communication' being considered by the Aarhus Convention Compliance Committee and it is questionable whether this situation is compliant with the Aarhus Convention. An ECT could be given the power to carry out reviews based on the merits of a case
- environmental litigation is carried out in several different courts and tribunals in Scotland, resulting in a system which is fragmented and inefficient.[33] A single ECT could achieve efficiency benefits by reducing the risk of having multiple legal proceedings arising out of the same environmental dispute by having multiple legal issues heard in the same forum, providing administrative costs savings and increasing convenience for the parties
- effectively resolving environmental disputes requires legal and scientific expertise. Judges in Scotland may not be exposed to environmental disputes on a regular enough basis to allow them to develop a specialism in this area. An ECT could appoint technical or scientific members to sit alongside judges – and would allow for judges to develop specialist expertise

There are various ways in which the ECT could fit into the existing Scottish Courts and Tribunals Structure:

1. A new independent court
2. Extension of jurisdiction of existing court (e.g. Scottish Land Court)
3. Introduction of an Environment First Tier Tribunal

At the time of writing the Scottish Government is consulting on environmental governance arrangements, including on the idea of an environmental court or tribunal. Without actually citing any evidence, they state that there is no case for an ECT.[34] This conclusion is being robustly challenged by NGOs and others.

For further information:
The clear and urgent case for a Scottish Environment Court, Environmental Rights Centre Scotland, 2023,
https://www.ercs.scot/wp/wp-content/uploads/2023/03/Case-for-a-Scottish-Environment-Court_Gemmell_March-2023.pdf
Why Scotland needs an environmental court or tribunal, Environmental Rights Centre Scotland, 2021,
https://www.ercs.scot/wp/wp-content/uploads/2023/03/Why-Scotland-needs-an-ECT-Oct-2021.pdf

[33] Forums include the Court of Session, Sheriff Courts, Scottish Land Court, the Department for Planning and Environmental Appeals, Lands Tribunal for Scotland and the Scottish Information Commissioner.

[34] Report into the Effectiveness of Governance Arrangements, as required by section 41 of The Environment Strategy for Scotland: (Continuity) (Scotland) Act 2021 the UK Withdrawal from the European Union Progress Report to the Parliament, Scottish Government, May 2023,
https://www.gov.scot/publications/report-effectiveness-environmental-governance-arrangements/

Introduce a Stop Ecocide law

Introduce a law which prohibits severe or long-term damage to the environment.

☑	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

The idea of including ecocide as an international crime has developed momentum in recent decades through the work of academics, lawyers and campaign organisations.

'Ecocide' can be defined as *'unlawful or wanton acts committed with knowledge that there is a substantial likelihood of severe and either widespread or long-term damage to the environment being caused by those acts.'* [35]

Campaign group Stop Ecocide International[36] is working towards making ecocide an international crime. Perhaps the most likely route would be to amend the Rome Statute of the International Criminal Court to include the crime of ecocide.

Recently, the Legal Affairs Committee of the European Parliament unanimously recommended that the European Union should criminalise ecocide and the European Parliament declared its support of the inclusion of ecocide-level crimes in the European Union's revised Directive on *protection of the environment through criminal law*.

Globally there are at least 12 national ecocide laws including Ecuador, France, Georgia and Ukraine,[37] and proposals have been tabled for similar laws in a number of countries, including Belgium and most recently Brazil.[38]

Labour MSP Monica Lennon has been actively promoting the idea in Scotland, including calling for an ecocide law in Scotland.

Despite its commitment to keep pace with environmental law developments the Scottish Government did not mention the idea of an Ecocide law in its recent consultation on the effectiveness of environmental governance in Scotland.[39] It should work with interested parties to develop proposals for a Scottish law on ecocide and support international efforts to make it a crime recognised by international law.

For further information:
Ecocide: a crime against the planet, Law Society of Scotland Journal, 2021, https://www.lawscot.org.uk/members/journal/issues/vol-66-issue-10/ecocide-a-crime-against-the-planet/
Monica Lennon MSP's Scottish Stop Ecocide Campaign https://www.ecocidelaw.scot

[35] Independent Expert Panel for the Legal Definition of Ecocide, Commentary and Core Text, Stop Ecocide Foundation, 2021, https://static1.squarespace.com/static/5ca2608ab914493c64ef1f6d/t/60d7479cf8e7e5461534dd07/1624721314430/SE+Foundation+Commentary+and+core+text+revised+%281%29.pdf

[36] Stop Ecocide International home page, https://www.stopecocide.earth

[37] Ecocide Laws in National Jurisdictions, Ecocide Law, 2022, https://ecocidelaw.com/existing-ecocide-laws/

[38] Ecocide Bill Submitted to Congress in Brazil, Stop Ecocide International, June 2023, https://www.stopecocide.earth/breaking-news-2023/ecocide-bill-submitted-to-congress-in-brazil

[39] Report into the Effectiveness of Governance Arrangements, as required by section 41 of The Environment Strategy for Scotland: (Continuity) (Scotland) Act 2021 the UK Withdrawal from the European Union Progress Report to the Parliament, Scottish Government, May 2023, https://www.gov.scot/publications/report-effectiveness-environmental-governance-arrangements/

2.1.3 Inclusion, participation and education

Boost public participation in climate action

Proactively harness the power of individuals, communities and other actors across Scotland for climate action and sustainable development by investing in awareness raising, and cultural and behaviour change programmes.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Scotland should deepen understanding of climate change across all parts of society while creating platforms for meaningful and sustained public engagement. This should include investing in education as a means of accelerating the transition to a sustainable society; placing meaningful public participation, particularly of affected, marginalised and vulnerable people, at the heart of climate policy making in Scotland including through long-term investment in community-led action.

Better public engagement and general understanding of the problems created by climate change and the solutions needed to address them, including the resulting co-benefits, will help head off any potential public and political backlash.

Education is the bedrock on which transformative action can be built. Young people are demanding faster emission cuts and for learning about the climate crisis to be core within the education system in Scotland. Currently, *'enabling young people to become responsible citizens'* is one of the four key capacities of the Curriculum for Excellence. Global Citizenship Education can help deliver this: it does not tell young people what to think but shows them that they have a voice and gives them the skills, knowledge and values to use it. It is enshrined in UN Sustainable Development Goal 4 and, in Scotland, within pupils' entitlement to Learning for Sustainability (LfS). However, teachers must have the support they need to deliver this. Sustained investment is required in the Learning for Sustainability Action Plan to realise the commitment for every school to have a 'whole-school' approach.

Meaningful public engagement must become the hallmark of climate action in Scotland, through the creation of ongoing platforms to facilitate this, building on the Climate Assembly and the participative approach adopted elsewhere by the Scottish Government, such as the Social Security Lived Experience Panels and, in relation to delivery of the International Development Strategy, the Global South Panel. An Ethnic Minorities Lived Experience Panel could also make a useful contribution.

For further information:
Social Security Lived Experience Panels, Scottish Government, https://www.gov.scot/collections/social-security-experience-panels-publications/
Teach the Future Scotland: https://www.teachthefuture.uk/scotland
Climate Solutions,RSGS, (Accessed 17 September 2020) https://www.rsgs.org/climate-solutions
Care, climate and covid-19 - building a wellbeing economy for scotland, Oxfam, 2021, p 17-19, https://oxfamapps.org/scotland/wp-content/uploads/2020/11/CARE-CLIMATE-AND-COVID-19-November-23-2020.pdf
culture/SHIFT home page, Creative Carbon Scotland, https://www.creativecarbonscotland.com/project/cultureshift/
Global South Panel, Scottish Government, https://www.gov.scot/groups/international-development-global-south-panel/

Include ethnic minority voices

Ensure ethnic minority voices are meaningfully and consistently included in the fight for climate justice in Scotland, including through funding and supporting platforms which enable this while proactively removing financial and other barriers to participation in policymaking.

This is a recommendation for both climate groups and local and national governments			
☐	Emissions reduction	☑	Behaviour change

It has never been more important that the voices of ethnic minority groups and organisations are listened to in Scotland in the fight for climate justice. We know that these groups are under represented in the environmental movement. Data show us that the nature sector is the second least diverse, with agriculture the only sector to perform more poorly.[40]

This is particularly concerning as the mainstream environmental movement, as well as governments, have so much to learn from these voices. Traditional knowledge of good ecological practices can play a huge role in shaping climate policy, as can the voices of diaspora communities in Scotland, many of whom have friends and family who are experiencing the devastating effects of climate change first hand.

Because of the barriers that ethnic minorities face in society (historical mistrust in public institutions, apathy from continued discrimination in society, more likely to live in poverty etc) participation should be meaningful in that outcomes/changes are clearly communicated to participants and also that they are remunerated for their time. Asking ethnic minorities to share their experiences is good but vitally important is how the Scottish Government responds to that and appreciates their time. In the past the government has been good at asking for lived experience but not communicating outcomes so it begs the questions - to what end and how does that actually help ethnic minority participants? The onus is on the government to ensure ethnic minority voices are heard in a way that is accessible, not in a tokenistic way.

Platforms such as the Ethnic Minority Environmental Network at CEMVO Scotland can play a key role in bridging the gap between grassroots, ethnic minority-led groups and mainstream environmental organisations.

A positive step would be for the Scottish Government to fund programmes like the CEMVO Scotland Race Equality Environmental Programme (REEP, currently funded by the Esmée Fairbairn Foundation). This programme aims to mainstream race equality into the policy and practice of environmental organisations in Scotland through 1-2-1 consultancy as well as training sessions.

For further information:
Ethnic Minority Environmental Network home page, www.theemennetwork.com
Race Equality Environmental Programme, CEMVO,
https://cemvoscotland.org.uk/race-equality-environmental-programme/

Include disabled people's voices

Ensure disabled people's voices are meaningfully and consistently included in the fight for climate justice in Scotland, including through funding and supporting platforms which enable this while proactively removing financial and other barriers to participation in policymaking.

This is a recommendation for both climate groups and local and national governments

[40] Route map towards greater ethnic diversity, Wildlife and Countryside Link, 2022, https://www.wcl.org.uk/diversity-route-map.asp

☐	Emissions reduction	☑	Behaviour change

Disabled people make up 15% of the world's population and are more vulnerable to the impacts of climate change due to being more likely to be marginalised by poverty and other social barriers that make them less likely to be evacuated safely, more prone to health risks and less likely to have insurance that protects their assets and homes.[41] Disabled people have historically been left out of policy discussions and must be included to co-produce ways forward that work for everyone.

Specifically, disabled people and their organisations must be involved in policy making to achieve a truly Just Transition to net-zero.

In its work on public engagement on climate change, the Scottish Government must ensure that disabled people and disabled people's own organisations are fully recognised and involved in the engagement process.

In the context of 'normalising' climate action, we need to be sure whose 'normal' we are using as a barometer. As we seek to rapidly shift towards a low-carbon economy we need to acknowledge where disabled people may experience discrimination or additional disadvantage and actively involve them in identifying the challenges and opportunities for creating sustainable, inclusive and accessible responses to climate change, being mindful about the scope for competing interests and goals, and the need for disabled Scots to be involved in co-producing ways forward that work for everyone.

Examples of where this can go wrong include some active travel schemes which are not accessible, and the current need for some single use plastics, for example drinking straws, for some disabled people.

For further information:
It's our planet too: Climate change, disabled people and climate action in Scotland, Inclusion Scotland, 2021,
https://inclusionscotland.org/wp-content/uploads/2021/10/Inclusion-Scotland-Its-Our-Planet-Too-Climate-Change-Disabled-People-and-Climate-Actiion-Report.pdf

Fund a public climate information campaign

The Scottish Government must fund a nation-wide, sustained communications campaign, co-created with civil society and communities, to explain to citizens the critical nature of the climate and nature emergencies, what the impacts in Scotland, region by region, are expected to be and by when, the need to act fast, and the co-benefits of action - in short to get the population behind action at the scale and speed required.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

This is to help to address the extreme urgency of the climate emergency and builds on the UN Secretary General's call for all developed economies to aim for net zero by as close as possible to 2040 and his statement that we need to do *"everything, everywhere, all at once"* to reduce emissions.[42]

[41] Disabled People Cannot Be "Expected Losses" in the Climate Crisis, Julia Watts Belser, 2019, https://truthout.org/articles/disabled-people-cannot-be-expected-losses-in-the-climate-crisis/

[42] Secretary-General Calls on States to Tackle Climate Change 'Time Bomb' through New Solidarity Pact, Acceleration Agenda, at Launch of Intergovernmental Panel Report, UN, March 2023, https://press.un.org/en/2023/sgsm21730.doc.htm

Unless people understand and believe how critical the situation is, what government policies are aiming to achieve and why, how they will be implemented and when, the government will struggle to win public backing for the changes that are required. Better public engagement and general understanding of the problems created by climate change and the solutions needed to address them will help head off any potential public and political backlash.

Government must work with civil society to co-create this campaign, perhaps including a revived Climate Assembly. It must go beyond current government-only communications campaigns[43] and messages, and must be accessible and inclusive.

Care should be taken to ensure the campaign is accessible to all. For example, disabled people's organisations could be funded to lead on communicating the campaign to those often, erroneously considered to be 'hard to reach.'

The messages must be open and frank and be clear about what we are facing and the likely consequences. The debate should also feature the co-benefits of action on climate change - for jobs and the economy, human health and nature.

It should carefully counter the myths that climate action will lead to economic disaster, when it is inaction which will create this. In doing this, the 'costs' (financial, both to individuals and the state, as well as poorer health, damaged nature, global conflict, etc) of inaction should be highlighted, and thus demonstrate that the costs of action are far smaller than the costs of inaction. This was the conclusion of the Stern Review[44] on the economics of climate change, which showed that acting today on climate change is much cheaper than waiting to act when the situation is much worse.

This campaign should explain the efficacy and risks attached to some of the proposed big solutions, for example:

a) the fact that carbon capture is far from proven technology at the scale required; we do not have the time to wait until it comes on stream whilst continuing our current carbon emissions trajectory in the meantime
b) policy must explain that we cannot just rely on carbon capture/negative emissions technologies to remove all the CO_2 emissions at some point in the future and expect the climate to stabilise back where it was at some point in the benign past. The 'carbon emissions' side of the Net-Zero equation must be as small as possible to reduce reliance on carbon capture/negative emissions technologies
c) the differences between green, blue and grey hydrogen, and the sectors where hydrogen could be an appropriate and viable energy source at scale
d) human wellbeing benefits from reduced air pollution, for example, and from more active travel etc
e) opportunities to tackle poverty and inequality through the transition to a zero carbon society
f) ensuring that carbon emissions and carbon emission reductions are counted with integrity

For further information:
A climate information campaign for Scotland, rdixon.scot, August 2023,
https://www.rdixon.scot/2023/08/09/a-climate-information-campaign-for-scotland/ &
https://www.scotsman.com/news/opinion/columnists/scottish-governments-climate-change-information-campaign-ducks-big-issues-like-flying-its-time-to-spell-out-just-how-much-of-a-crisis-we-are-in-dr-richard-dixon-4247473

Boost climate solutions literacy

[43] For example, Net Zero Nation, https://www.netzeronation.scot

[44] The Economics of Climate Change, Nicholas Stern, 2006, see https://www.lse.ac.uk/granthaminstitute/publication/the-economics-of-climate-change-the-stern-review/

Boost climate change education and awareness raising so that everyone can become better informed about how to respond to risks, responsibilities or opportunities. Scotland should become a climate literate nation by investing in and promoting Global Citizenship Education within the curriculum framework of Learning for Sustainability, and broader public awareness raising.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Scotland's children and young people have an entitlement to Learning for Sustainability (LfS) within the Curriculum for Excellence, and it is also embedded within the GTCS Professional Standards. LfS is a combination unique to Scotland of sustainable development education, global citizenship education and outdoor learning. Global Citizenship Education (GCE) provides a framework for educators to connect the Scottish curriculum to real-world issues that young people care about. Topics like climate justice, gender equality, anti-racist education and rights can be explored through a Global Citizenship lens, allowing young people to understand and care about what happens locally and globally but also recognise their role and responsibility in bringing about lasting change.

The recently launched Scottish Government Target 2030 Action Plan for Learning for Sustainability[45] sets targets for schools to become Sustainable Learning Settings by 2030 through action across curriculum, culture, community and campus. Delivering this action plan could help us achieve success in many other areas of climate action.

To support the delivery of this action plan, there needs to be recognition of the important role played by the Development Education Centres as well as a commitment to their continued funding – on a minimum 3-year cycle - to support and deliver crucial Continued Professional Learning for teachers on Global Citizenship Education. High quality professional learning around Global Citizenship Education supporting transformative approaches needs to be accessible and available to all teachers and time needs to be given to teachers to engage with these pedagogical approaches.

As well as formal education climate change literacy needs to be built into lifelong learning and community learning opportunities. Individuals, communities, businesses and the public sector can achieve carbon solutions literacy through training opportunities such as the accredited Climate Emergency Training delivered by Keep Scotland Beautiful (the strategic partner in Scotland for the Carbon Literacy Project), with training adaptable to suit the different needs of sectors and audiences, or through introductory training.

Businesses can also put in place organisation-wide environmental management systems and take part in award schemes such as the National Award for Environmental Excellence which recognises environmental and carbon management best practice as well as maintenance, waste management and community engagement. Having an environmentally engaged workforce is vital in helping to meet new regulations or targets, and customer expectations as Scotland strives to become a net-zero nation.

Climate education and climate action have many co-benefits which include: improved understanding of wider climate impact on issues such as justice; improvements to human

[45] "Target 2030" - A movement for people, planet and prosperity: Scotland's Learning for Sustainability Action Plan 2023-2030, Scottish Government, June 2023, https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2023/06/target-2030-movement-people-planet-prosperity/documents/target-2030-movement-people-planet-prosperity-scotlands-learning-sustainability-action-plan-2023-2030/target-2030-movement-people-planet-prosperity-scotlands-learning-sustainability-action-plan-2023-2030/govscot%3Adocument/target-2030-movement-people-planet-prosperity-scotlands-learning-sustainability-action-plan-2023-2030.pdf

health and wellbeing; increasing focus and action on nature and biodiversity restoration; and, understanding of sustainability and circular principles.

For further information:
Local Government Manifesto, Keep Scotland Beautiful, 2022,
https://www.keepscotlandbeautiful.org/media/1568968/keep-scotland-beautiful-manifesto-asks-2022.pdf
KSB Climate Emergency Training,
https://www.keepscotlandbeautiful.org/climate-change/climate-change/climate-emergency-training/
KSB Environmental Services,
https://www.keepscotlandbeautiful.org/environmental-services/
Exploring Climate Justice: A human rights-based approach, Ideas for Global Action, 2021,
https://www.ideas-forum.org.uk/climate-justice-education
See also the policy "Boosting Business Participation in Climate Action" in the Business and Industry chapter.

Climate Change Education - empowering children and young people to take climate action

Climate change was identified by the current generation of learners as one of the 'most significant issues' facing their future as set out in the Muir Report.[46] The report also recommended that climate change be recognised as a key driver influencing the future of the education system.

Progressing both Learning for Sustainability (LfS) and climate education, Climate Action Schools (CAS) is a framework of education initiatives supporting Scotland's educators, young people and children. CAS incorporates a number of initiatives including Eco-Schools Scotland (a whole-school, pupil-led approach to LfS), Climate Ready Classrooms (a one-day accredited carbon literacy course), and opportunities for Professional Learning. The framework has four key components: learning for sustainability, climate emergency, biodiversity, litter and pollution, and amplifying pupil voice. It supports Curriculum for Excellence (CfE), and is inclusive and accessible to all.

Enabling young people to become confident individuals, successful learners, responsible citizens, and effective contributors is the aim of CfE. The programmes and activities offered through the CAS framework are designed to support children and young people to gain and develop the knowledge, skills, and attributes required to take positive action to tackle the challenges of life and work in the 21st Century.

Children and young people's rights and entitlements are central to CfE, including the right for each learner to experience LfS as well as developing the skills for learning, life, and work. CAS provides opportunities for learners to contribute their voice to decision-making that shapes their education through activities such as Young Reporters for the Environment and in particular the Eco School Committee aspect to the Eco-Schools programme, an activity that can influence the whole-school approach through environmental issues or topics identified by pupils involved.

For further information: KSB Climate Action Schools:
https://www.keepscotlandbeautiful.org/climate-action-schools/
KSB 2022 Local Government Manifesto:
https://www.keepscotlandbeautiful.org/media/1568968/keep-scotland-beautiful-manifesto-asks-2022.pdf

[46] Putting Learners at the Centre: Towards a Future Vision for Scottish Education, Scottish Government, 2022, https://ltl.org.uk/wp-content/uploads/2022/05/ken-muir-report-putting-learners-centre-towards-future-vision-scottish-education.pdf

Recognise Fair Trade in education

Ensure Fair Trade is recognised in school education and lifelong learning.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

The concept of Fair Trade demonstrates sustainability in action.

Through the Scottish Government's commitment to Global Citizenship Education (GCE), the concept of Fair Trade must be embedded at all levels including through curriculum and learning activities, and in research, contributing to learning for sustainability and global citizenship in educational institutions as well as workplace learning and training.

See also 'Public sector commitment to the Fair Trade Nation' policy in the Public Sector chapter.

For further information:
Linking with the curriculum, Scottish Fair Trade Forum,
https://www.scottishfairtradeforum.org.uk/get-involved/teachfairtrade/linking-with-the-curriculum/

3. Scotland's contribution to international climate action

"Recent COPs have failed to deliver the progress needed on climate finance and commitments to reduce emissions. However, despite not being an official party to the talks, Scotland showed leadership at COP26 and played a vital role in moving on the debate on Loss and Damage. Scotland must continue to champion international climate justice, set a strong example to other Global North countries and do what it can to drive progress." Prof. Saleemul Huq, International Centre for Climate Change and Development (ICCCAD), Bangladesh

Most of the issues arising in the UN climate negotiations centre around questions of equity, historic responsibility and the capability to act. These are at the heart of climate justice. Long-term tensions between 'developed' and 'developing' country parties to the UN climate framework focus on these questions, therefore they are key to unlocking the global cooperation that is essential to achieving the Paris Agreement target of limiting global temperature increase to 1.5ºC. As an industrialised country, indeed one of the prime drivers of industrialisation, Scotland has a historical climate debt to repay. This debt continues to grow and will do so until Scotland achieves net zero, under current plans, in 2045. Therefore, the primary action the Scottish Government can take to contribute to international climate justice is to fairly and swiftly reduce its emissions and meet its climate targets.

The United Nations Framework Convention on Climate Change requires high-income countries to contribute to low-emissions development and help fund adaptation measures in low-income countries. Adequate provision, or lack thereof, of climate finance is a highly contentious issue.

A pledge from the Copenhagen climate talks in 2009 to mobilise £100bn a year in 'climate finance' by 2020, while wholly inadequate, has yet to be achieved. Global South parties are fighting for a new long-term goal for finance that is based on what is needed and owed, rather than what is politically expedient. A breakthrough agreement at COP27 in Sharm-el-Sheikh saw the creation of a specific fund to address Loss and Damage caused by rising temperatures, however there are legitimate fears that it will not be adequately resourced.

BOX – What is Loss and Damage?[47]

The 'losses and damages' of climate change refer to the impacts - both economic, such as damage to infrastructure, and non-economic, such as loss of culture - which can no longer be avoided by reducing our emissions or adapting to global temperature increases. These impacts affect both humans and the natural environment.

Damage from climate change includes impacts such as loss of life, loss of land, loss of income, loss of traditional knowledge and culture, or loss of personal possessions. These losses may be from floods, droughts, storms, or processes such as desertification, sea-level rises or the spread of tropical diseases.

The devastating floods in Pakistan in 2022 affected around 33 million people and estimates put losses at $43bn. That is $43bn for one event in one country. More widely, Oxfam estimates that funding requirements for UN humanitarian appeals linked to extreme weather are eight times higher than they were 20 years ago, and over the past five years nearly half of appeal requirements have gone unmet. Funding for emergency humanitarian response is piecemeal and inadequate, as is broader support to address loss and damage, such as rebuilding homes and vital infrastructure.[48]

Estimates of the kind of sums needed and owed are very large indeed, with a report by the UNFCCC Secretariat citing an estimate of almost $6trillion per year by 2030.[49] Analysis[50] using the 'Fair Shares' methodology, which is rooted in the science of carbon budgets and the principles of equity under the UNFCCC,[51] shows that if the UK was to reduce its own emissions to zero by 2030, it would still be responsible for an estimated total of £1 trillion in support for developing countries. Given that the UK has committed to net-zero by 2050, its financial obligations are considerably greater. Scotland is responsible for a portion of the UK's Fair Share, both in terms of mitigation and finance. Given its more ambitious mitigation targets of 75% by 2030 and net-zero by 2045, its climate finance obligations will be slightly less than the UKs on a proportional basis.

Although Official Development Assistance (ODA) is a reserved matter, the Scottish Government created the Climate Justice Fund (CJF) in 2012, initially to support communities in four countries in Eastern Africa to adapt to the changing climate, with a focus on water projects. Importantly, this Fund was additional to the Scottish Government's International Development Fund. The intention was that the CJF would also be additional to UK ODA spending, but the UK Government unhelpfully includes all Scottish Government international spending - whether on climate justice, international development or humanitarian response, as part of UK ODA spend.[52] At the same time, the UK Government has also reduced ODA from the internationally agreed target of 0.7% of Gross National Income to 0.5%, and in 2022 nearly a third of the aid budget was spent supporting refugees within the UK[53].

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[47] First two paragraphs from SCIAF briefing Guide to Loss and Damage, 2022, https://www.sciaf.org.uk/assets/000/002/487/Guide_to_Loss__Damage_original.pdf?1659951158

[48] Footing the bill: fair finance for loss and damage in an era of escalating climate impacts, Oxfam International, 2022, https://www.oxfam.org/en/research/footing-bill-fair-finance-loss-and-damage-era-escalating-climate-impacts

[49] Views on the objectives and elements identified in decision 9/CMA.3 on the new collective quantified goal on climate finance, UNFCCC Secretariat, October 2022, https://unfccc.int/sites/default/files/resource/tp2022_02_adv_0.pdf

[50] The UK's Climate Fair Share Infographic, War on Want, 2020, https://waronwant.org/resources/uks-climate-fair-share-infographic#:~:text=This%20is%20not%20just%20a,at%20least%20£1%20trillion

[51] Climate Equity Reference home page, https://climateequityreference.org/

[52] Statistics on International Development: final UK aid spend 2021, UK Government, 2023, https://www.gov.uk/government/statistics/statistics-on-international-development-final-uk-aid-spend-2021/statistics-on-international-development-final-uk-aid-spend-2021

[53] https://commonslibrary.parliament.uk/research-briefings/cbp-9224/

All rich, industrialised countries must meet their international climate finance obligations, and respond to spiralling losses and damages, without simply rebadging their existing - and often already insufficient - international development assistance. They have a duty to identify new sources of finance, over and above their existing ODA commitments, to avoid robbing crucial anti-poverty projects, including funding for schools and hospitals, as well as humanitarian projects, to fund action to address the additional challenges created by the climate crisis. Unless new finance is identified and committed to address losses and damages, wider development gains - both past and those sought in future - will be undermined. The identification of additional funding would also avoid the redirection of funds from other domestic priorities, such as funding for crucial public services.

The Scottish Government commitment to the CJF is now worth £36m over the course of this Parliament, following the trebling of the Fund during COP26.[54] At those Glasgow talks, the Scottish Government also became the first national government to commit funding to address loss and damage, with a £2m allocation from the CJF. A further £5m was allocated to loss and damage from the wider CJF during COP27.

3.1 Policies

3.1.1 Strategic approaches

Prevent all domestic climate policies from creating adverse consequences internationally

Scotland's climate policies must be carried out in a manner that does not inadvertently 'offshore' the emissions elsewhere or make it harder for other nations to make their own fair contribution to the global effort.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Clearly, all the policies and proposals in this document seek to contribute to a reduction in emissions, and thus help to reduce Scotland's adverse impact on the climate. However, climate policies must also contribute to the achievement of the Sustainable Development Goals (SDGs). To meaningfully ensure contribution to achievement of the SDGs, the Policy Coherence for Sustainable Development (PCSD) approach, that has wide support across government, should be adopted. PCSD is an approach and policy tool for integrating sustainable development at all stages of domestic and international policy making. Specifically, PCSD helps to:

(a) foster synergies across economic, social and environmental policy areas
(b) identity trade-offs and reconcile domestic policy objectives with internationally agreed objectives
(c) address the spill-overs of domestic policies

Therefore, to meaningfully ensure coherence with the SDGs, there must be a rigorous assessment of the global impacts of domestic climate policies. For example, the impact of the extraction of minerals for renewable energy technologies or electric vehicles, is covered in the policy entitled 'minimise demand for transition materials' in the Waste and the Circular Economy chapter.

[54] Scotland to boost climate funding, Scottish Government, 2021, https://www.gov.scot/news/scotland-to-boost-climate-funding/

Beyond just climate policies, the Scottish Government should commit to a strategic priority of 'do no harm' with regard to economic, climate or social outcomes in other parts of the world, particularly in the Global South, in implementing Scotland's Just Transition.[55]

As well as preventing adverse consequences internationally, Scotland's domestic and overseas climate policies and projects should also proactively advance equality, as embodied, for instance, in the Glasgow Women's Leadership statement.[56]

For further information:
Scottish Parliament Manifesto recommendations, Christian Aid, 2021, https://www.christianaid.org.uk/sites/default/files/2022-08/christian-aid-scotland-manifesto-2021.pdf
Policy Coherence for Sustainable Development resource page, Scotland's International Development Alliance, https://www.intdevalliance.scot/how-we-help/policy-and-advocacy/policy-coherence-sustainable-development
Policy coherence for sustainable development resource page, OECD, https://www.oecd.org/gov/pcsd/
Unearthing injustice - a global approach to transition minerals, FoE Scotland, May 2023, https://foe.scot/wp-content/uploads/2023/05/Unearthing-Injustice.pdf

Recognition of the links between climate breakdown and migration

Put in place a package of measures to recognise and help, within the limits of devolved powers, people who become migrants because of climate change.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

Migration is an inseparable part of human history: the Scottish diaspora is a well-known example.

However, across the world the speed and scale at which people are currently being displaced from their homes is unprecedented. We are experiencing the highest levels of forced displacement on record. In addition to those displaced by war, violence, persecution and human rights abuses (all of which may be exacerbated by increasing climate stress), we are witnessing increasing numbers of people displaced by climate change-related impacts including extreme weather, drought or sea-level rise.

People who migrate systematically face violence throughout their migration journeys. Around 80% of climate displaced people are women and different population groups are differently impacted. Recently UK (and EU) immigration policy has been to increase militarisation of borders and to turn to criminalisation/detention of refugees. It is hard not to conclude that this is partly because governments understand that the climate breakdown and ecosystem damage – which privileged countries are causing and have historically caused – are driving growing numbers of people to try to move from unliveable to liveable climate zones.

[55] The Just Transition Commission called for this in their 2022 report Making the Future, https://www.gov.scot/binaries/content/documents/govscot/publications/independent-report/2022/07/making-future-initial-report-2nd-transition-commission/documents/making-future-initial-report-2nd-transition-commission/making-future-initial-report-2nd-transition-commission/govscot%3Adocument/making-future-initial-report-2nd-transition-commission.pdf

[56] Gender equality and climate change: Glasgow Women's Leadership statement, Scottish Government & UN Women, 2021, https://www.gov.scot/publications/glasgow-womens-leadership-statement-gender-equality-climate-change/#:~:text=We%20believe%20that%20the%20fight,climate%20change%20are%20to%20succeed

Developments at the UK level, including the new Illegal Migration Act and the plan to send refugees to Rwanda, are abhorrent.

Within areas of devolved power, we welcome the continuation of the New Scots Refugee Integration Strategy.[57] The Scottish Government should:

1. make a public commitment to a humane policy on migration that is forced by climate breakdown, recognising that the most marginalised communities are on the front line of the climate crisis and often face its worst impacts, and challenging 'migrant crisis' narratives
2. accelerate the scale and implementation of the Climate Justice Fund and Loss and Damage Fund; recognising that where damage and loss are already occurring, forced migration often results.
3. promote peaceful, rights-based approaches to migration at origin, transit and destination: this could be a major strand of work for the proposed Peace Institute for Scotland, but should also be supported by strong public messaging
4. open up and co-create, for example with the Scottish Refugee Council and City of Sanctuary, spaces of imagination and possibility to gain new perspectives on migration and mobility
5. take higher-profile action to tackle structural violence, counter hate speech and safeguard the rights of migrants who have arrived in Scotland, whether asylum seekers or recognised/resettled refugees
6. reflecting reserved powers, the Scottish Government should call on the UK Government to
    a. support safe and equitable migration systems
    b. counter hate speech and safeguard the rights of migrants according to international law

For further information:
Climate change exacerbates violence against women and girls, UN OHCHR, 2022, https://www.ohchr.org/en/stories/2022/07/climate-change-exacerbates-violence-against-women-and-girls

3.1.2 Climate finance and Loss and Damage

Deliver on UK climate finance commitments

The UK Government should fully deliver upon its global responsibilities on climate finance, ensuring this is: fully additional to Official Development Assistance; with finance for adaptation delivered as grants not loans; achieves a balance between adaptation and mitigation finance; is targeted towards Least Development Countries (LDCs) and Small Island Development States (SIDS); prioritises funding for local actors and gender transformative solutions; and is transparently reported.

☐	International	☑	UK Govt	☐	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

The UK's climate finance should be grant-based rather than loans (to avoid increasing the debt burden on nations), and greater effort is needed to ensure that it reaches the countries and communities that need it most.

The UK Government should publish annual figures on its planned spending towards the

[57] Supporting New Scots, Scottish Government, 2023, https://www.gov.scot/news/supporting-new-scots/

collective target of $100 billion and doubling of adaptation finance by 2025 in order to strengthen accountability, transparency and predictability. This will also help to build momentum towards the collective commitment to double funding for adaptation which was secured under the UK's COP26 Presidency in Glasgow in 2021 and re-stated at COP27 in 2022. The UK also made a specific commitment to triple its adaptation funding by 2025.

Given that the $100bn commitment is so insufficient compared to the real needs of vulnerable countries, the UK Government should also support the setting of a new long-term goal for finance for the period post-2025 under the UNFCCC that is based on an assessment of what is needed and owed, as called for by Global South countries in the negotiations.

The UK Government should deliver the UK's fair share[58] of finance for climate mitigation and adaptation, and commit the UK to providing new and additional finance for loss and damage, including raising some of this by making polluters pay.

The UK has a significant historic responsibility for climate change, having led and financially benefited from the industrial revolution and the carbon-based economy. With the global agreement at COP27 to establish a Loss and Damage (L&D) fund, the UK has an opportunity to show integrity and deliver on its obligations to climate-vulnerable communities, by delivering on its fair share of climate finance, and committing new and additional finance for L&D.

The $100 billion a year in promised climate finance, which does not include the additional finance needed to address L&D financing, was always an insufficient goal. However, coupled with action to address loss and damage, it remains critical to beginning to address the unfair suffering climate-vulnerable communities are facing**.**

Delivering public finance is one key step to leveraging the scale of finance needed; governments should also support the unlocking of innovative sources of finance, such as windfall taxes and multilateral development bank reform.

Climate solutions are being innovated by frontline communities, who are also the first responders to climate-related disasters. The UK Government should play a key role in funding locally-led initiatives and making sure climate finance reaches the communities most affected by climate change.

The UK Government should use its influence to help to secure a significantly increased climate finance goal for the period post-2025, ensuring this is needs-based and adaptable over time, responding to new evidence and emerging needs. The new goal must recognise the need for public grant-based finance where no returns on investment are required, particularly for adaptation and addressing loss and damage. The new goal must include sub-goals for mitigation, adaptation and addressing loss and damage. It should also explicitly recognise the special situation of Less-Developed Countries, Small Island Developing States and other highly climate-vulnerable contexts, including by prioritising them for grant-based and highly concessional finance.

In addition, the UK Government should restore the value of Official Development Assistance (ODA) to 0.7% of Gross National Income.[59] The Scottish Government should try to influence the UK Government to meet and exceed the 0.7% target.

For further information:
The World Bank's Evolution Roadmap will not deliver climate justice, Eurodad, June 2023, https://www.eurodad.org/world_bank_evolution_roadmap_climate_justice?utm_campaign=newsletter_1_06_2023&utm_medium=email&utm_source=eurodad

[58] The 'Fair Shares' methodology is rooted in the science of carbon budgets and the principles of equity under the UNFCCC, see for example, Climate Fair Shares, FoE International, https://www.foei.org/what-we-do/climate-justice-and-energy/climate-fair-shares/

[59] On current plans this will not rise to 0.7% again until 2027/8, see, for example, The 0.7% Aid Target, House of Commons Library, 2022, https://commonslibrary.parliament.uk/research-briefings/sn03714/

Climate Finance Shadow Report 2023, Oxfam, June 2023:
https://policy-practice.oxfam.org/resources/climate-finance-shadow-report-2023-621500/
Building back with justice - dismantling inequalities after Covid-19, Christian Aid, 2020,
building-back-justice-covid19-report-jul2020_0.pdf (christianaid.org.uk) p.55

Progress towards the £100bn Climate Finance goal [60]

At the Copenhagen climate talks in 2009, the world's rich nations agreed to come up with $100bn a year from 2020 to help poorer countries reduce emissions and adapt to climate change. This target has not been met and much of the finance that *is* on offer is in the form of loans. The OECD[61] found that the level of total climate finance reported in 2020 was just $83.3bn. However, an Oxfam report[62] found much of it to be overstated; they estimate that the real value of support specifically aimed at climate action was only around $21bn to $24.5bn. In addition, only around 2.9% of climate-related development finance identified gender equality as a principal objective and data on how much finance is spent at local level is seriously lacking. Beyond the failure to mobilise finance as promised, and an imbalance between reported public finance for projects which reduce emissions (59%) and those that help adaptation to climate change (33%), the real needs of low-income countries are well beyond $100bn a year.

A detailed analysis[63] in 2021 used a composite of national income, cumulative emissions and population to calculate the UK's fair contribution to the $100bn at $5.9bn a year, of which it was contributing about half at the time. Scotland's population-based share of this would be about £450m a year.

Of course, it is not appropriate to compare this to the current level of the Scottish Government's Climate Justice Fund since overseas aid is a reserved matter. Thus, the UK Government should be paying its full share of the $100bn commitment from UK-wide revenues. The Scottish Government's contribution in the form of the Climate Justice Fund, from devolved revenues, should be seen as additional and a welcome message of commitment to other countries and sub-national bodies.

In addition to money to help countries adapt to the changing climate, there is a need for finance to compensate communities for irreparable losses and damages created by it. 'Loss and Damage' is strongly concentrated in poorer populations; it is estimated that it will cost developing countries between $290bn and $580bn a year by 2030.[64] Based on the analysis above, Scotland's share of this would be, very approximately, £1.25-2.5bn a year.

So, in 2030, Scotland's combined contribution to the $100bn climate finance commitment and the mid-range estimated cost of Loss and Damage would be about £2.3bn a year - to be paid directly or by the UK on Scotland's behalf. However, this figure is likely to grow due to a failure to reduce emissions at the speed required, leading to deeper climate impacts, and when the new global climate finance goal is agreed for the period after 2025.

Maintain and expand commitments to international climate finance including increasing the Climate Justice Fund

[60] Adapted from Financing Climate Justice, SCCS, 2022, https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

[61] Aggregate Trends in Climate Finance Provided and Mobilised by Developed Countries in 2013-2020, OECD, 2022, https://www.oecd.org/climate-change/finance-usd-100-billion-goal/aggregate-trends-of-climate-finance-provided-and-mobilised-by-developed-countries-in-2013-2020.pdf

[62] Climate finance shadow report 2023 - Assessing the delivery of the $100bn commitment, Oxfam, 2023, https://policy-practice.oxfam.org/resources/climate-finance-shadow-report-2023-621500/

[63] A fair share of climate finance? - Apportioning responsibility for the $100 billion climate finance goal, ODI, 2021, https://cdn.odi.org/media/documents/ODI_WP_fairshare_final0709.pdf

[64] Loss and Damage from Climate Change: Concepts, Methods and Policy Options, Mechler et al, Springer, 2019, https://link.springer.com/book/10.1007/978-3-319-72026-5

Maintain and expand commitments to international climate finance, including, within current devolved powers, significantly increasing the Climate Justice Fund (CJF) through measures to make polluters pay, and use this example to urge the UK Government to fulfil its fair share contribution to both climate finance and addressing loss and damage.

☑	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Extreme weather events, events like droughts and sea-level rise are intensifying.[65] Governments in the global North must meet their overdue commitment to raise $100bn a year of climate finance for poorer countries from 2020 and build on this by mobilising significant levels of additional funding, in line with the scale of the climate crisis and their historic contribution to it.

It is vital that finance to support countries suffering the consequences of the climate crisis is fully additional to wider development assistance, given that spiralling climate impacts are independent of existing development goals. In reflecting this, and Scotland's past and present role in causing the climate crisis, the Climate Justice Fund should be significantly increased, building towards our fair share of international climate finance, and Scotland should champion further global funding to ensure continued alignment with climate action principles, as set out in the Paris Agreement (para 5, Article 7).

The Climate Justice Fund was created in 2012 with cross-party support. Since the commitment of £3 million per year to the CJF at COP21 in Paris, substantial fiscal powers have been devolved to the Scottish Parliament. This represents a significant increase in opportunity for the Scottish Government to mobilise new sources of finance to help in the collective global effort to tackle the climate emergency.

The Scottish Government's existing financial commitments to the Climate Justice Fund are £36m this Parliament, including £7m for action to address loss and damage.

The Scottish Government can set a progressively strengthening example to other global-north countries and devolved actors by:

1. significantly increasing the CJF using devolved revenue-raising powers to ensure the money is additional and not simply repurposed from other initiatives, domestic or international, and does not detract from action on climate emissions at home
2. calling, proactively, for other rich countries to increase their own contribution while championing additionality, building on Scotland's example to date, including urging the UK Government to pay their fair share of climate finance[66]
3. exploring how Scotland could raise significant additional monies through measures which make polluters pay for their damage

The Scottish Government also should at least maintain, but expand where possible, its Humanitarian Emergency Fund in recognition that the frequency and severity of extreme weather events is increasing, and the current humanitarian system is unable to cope.[67]

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[65] Climate change widespread, rapid, and intensifying – IPCC, https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/

[66] The UK's Fair Share to limit global warming to 1.5ºC, Action Aid, Christian Aid, Friends of the Earth England, Wales & Northern Ireland, Friends of the Earth Scotland, War on Want, 2021, https://waronwant.org/sites/default/files/20-21_FairShareUK_Infographic_web.pdf

[67] Footing the bill: fair finance for loss and damage in an era of escalating climate impacts, Oxfam International, 2022, https://www.oxfam.org/en/research/footing-bill-fair-finance-loss-and-damage-era-escalating-climate-impacts

Scotland should harness our international recognition as the first Global North country to commit finance to Loss and Damage, to develop an effective model for Scotland's Loss and Damage programme with international experts and ensure that the whole of the Climate Justice Fund is spent in a locally-led, transparent and transformative way. This could include, for instance, creating an ongoing international platform for learning and sharing knowledge on loss and damage.

For further information:
2021-2026 Policy Priorities for Scotland, SIDA, 2021,
https://www.intdevalliance.scot/how-we-help/2021-scottish-election
Financing Climate Justice,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf
Footing the bill: fair finance for loss and damage in an era of escalating climate impacts, Oxfam, 2022,
https://www.oxfam.org/en/research/footing-bill-fair-finance-loss-and-damage-era-escalating-climate-impacts
Funds needed for extreme weather-related humanitarian appeals eight times higher than 20 years ago, Oxfam, 2022,
https://www.oxfam.org.uk/media/press-releases/funds-needed-for-extreme-weather-related-humanitarian-appeals-eight-times-higher-than-20-years-ago/
Fair Sources of Finance for a New Loss and Damage Funding Arrangement, Quakers United Nations Office, 2023,
https://quno.org/sites/default/files/timeline/files/2023/Fair%20Sources%20of%20Finance%20for%20a%20New%20Loss%20and%20Damage%20Funding%20Arrangement__31%20May%202023__QUNO__Carlson.pdf

Provide climate finance and money to address Loss and Damage as grants

Ensure climate finance, including Loss and Damage funds, are allocated as grants, which do not entail repayment, rather than loans, the repayment of which leads to high levels of sovereign debt.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Many of the countries dealing with the front line impacts of the climate crisis are poorer nations already in severe debt. This situation leaves these countries with no resources to promote adaptation to the changing climate or to tackle loss and damage. These countries have done the least to contribute to the climate crisis; they should not have to pay financially for the damage caused by the climate crisis while already paying in lives and culture, and in numerous other ways. For this reason, and because Scotland and the UK as a whole have contributed so substantially to the crisis, Scotland and the UK must provide climate finance in the form of grants, not loans.

For further information:
What does debt have to do with climate?, Jubilee Scotland, 2022,
https://www.jubileescotland.org.uk/what-does-debt-have-to-do-with-climate/
UK MPs call for law to make private lenders deliver debt relief, Debt Relief, 2023,
https://debtjustice.org.uk/press-release/uk-mps-call-for-law-to-make-private-lenders-deliver-debt-relief

Mainstream climate action in all international work

Mainstream climate action in all international development programming and safeguard against climate risks relative to development impact.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

All Scottish International Development Fund (IDF) programming must be climate-proofed. As climate risks escalate, without mitigating action, the effectiveness of climate-sensitive initiatives will decrease.

Projects funded through the IDF, therefore, should be developed and assessed through a Policy Coherence for Sustainable Development lens to ensure they are coherent with climate change issues.

Climate-proofing IDF projects in this way recognises the extent to which a project is vulnerable to climate change, ensures they do not contribute, inadvertently, to climate change, and incorporate opportunities to adapt to, and mitigate, climate risks.

Climate-proofing should be conducted at strategic and intervention levels. Both the Scottish Government International Development team and the agencies implementing IDF-supported projects should be able to conduct climate-risk analyses and climate-proofing.

The OECD guidance[68] on how to incorporate climate adaptation into development projects should be integrated into management of the IDF and the interventions it finances.

The 2019 Climate Change Act commits Scottish ministers to supporting international adaptation, and to outlining policies and programmes to achieve this, within both the climate change and domestic adaptation plans. This exemplifies PCSD in action.

For further information:
2021-2026 Policy Priorities for Scotland, SIDA, 2021,
https://www.intdevalliance.scot/how-we-help/2021-scottish-election

Urgently progress the UN Loss and Damage Fund

The Scottish and UK governments should use whatever roles they have to help ensure the new global Loss and Damage Fund is effectively and equitably operationalised and speedily funded in line with surging financial needs.

☑	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Principles to govern the UN Loss and Damage Fund (LDF) include:

- international cooperation and solidarity, historical responsibility and the polluter pays principle
- new and additional funding (to ODA and climate finance commitments)
- needs-based, adequate, predictable and precautionary
- locally driven with subsidiarity – enveloping gender responsiveness and equitable representation
- public and grant-based, not loans

[68] Integrating Climate Change Adaptation into Development Co-operation: Policy Guidance, OECD, 2009, https://www.oecd.org/development/integratingclimatechangeadaptationintoDevelopmentco-operationpolicyguidance.htm

- balanced and comprehensive - being available for both short- and long-term needs, and addressing non-financial losses

The steps that need to happen, both at COP28 and beyond it, to make the Loss and Damage Fund work include:

- Use COP28 to report progress on, and confirm, the governing arrangements and delivery structure of the Loss and Damage Fund
- After COP28, urgently deliver an ambitious and speedy process for needs-based resource mobilisation for the LDF, with finance being channelled to developing countries
- regular and multi-year country contributions based on the UNFCCC principle of common but differentiated responsibilities and respective capabilities
- national loss and damage finance needs become a core element of the UNFCCC Global Stocktake
- loss and damage being included as a dedicated sub-goal in the new collective quantified climate finance goal (NCQG) post-2025 under the Paris Agreement.
- mainstream gender by making loss and damage a core element in the UNFCCC's Gender Action Plan, including ensuring all action has an explicit gender lens so it does not exacerbate existing inequalities

Among other routes, the Scottish Government can argue this case through the Under 2 Coalition[69], of which it is currently co-chair, and other states and regions networks such as the Marrakech Partnership and ICLEI.

For further information:
The Loss and Damage Finance Facility - Why and How, Christian Aid, 2022, https://www.christianaid.org.uk/sites/default/files/2022-10/the-loss-and-damage-finance-facility.pdf
The Loss and Damage Fund - Where does the money come from?, Christian Aid, March 2023, https://www.christianaid.org.uk/sites/default/files/2023-05/the-loss-and-damage-fund_may-2023.pdf
Fair Sources of Finance for a New Loss and Damage Funding Arrangement, Quakers United Nations Office, 2023, https://quno.org/sites/default/files/timeline/files/2023/Fair%20Sources%20of%20Finance%20for%20a%20New%20Loss%20and%20Damage%20Funding%20Arrangement__31%20May%202023__QUNO__Carlson.pdf
Footing the Bill: fair finance for loss and damage in an era of escalating climate impacts, Oxfam, 2022, https://www.oxfam.org/en/research/footing-bill-fair-finance-loss-and-damage-era-escalating-climate-impacts

3.1.3 Debt

Legislation to aid debt cancellation and restructuring

The UK Government must pass legislation that compels private creditors to provide debt relief when a country seeks it.

☑	International	☑	UK Govt	☐	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

The passage of UK legislation is key in the fight against unjust and unsustainable debt, which locks developing countries into servicing debt rather than allowing them to fund public services

[69] Under 2 Coalition home page, https://www.theclimategroup.org/under2-coalition

and adaptation to climate change. We do not suggest prescribing where developing countries should allocate their funds; however, it is vital that the UK provides justice and removes the increased pressure on developing countries' ability to provide public services and adapt to, and perhaps even to help mitigate, the effects of climate change.

The UK has a vital role to play, as 90% of bond contracts of countries eligible for the G20's debt relief scheme are governed by English law.[70] The other key governing jurisdiction is New York. The New York State Assembly is considering options for legislation to put pressure on private creditors to take part in debt relief.[71] The IMF and World Bank have both called for the UK and New York to pass legislation to help enable private lender participation in debt relief.

Recently, the UK Parliament's International Development Select Committee called for the exploration of this type of legislation. Specifically, this committee stated that *"legislation may be required to compel all creditors, including the private sector, to participate in debt relief"* and have called on the UK government to *"consult on the introduction of legislation to compel or incentivise participation of private creditors in the Common Framework."* [72, 73]

The G20's Common Framework, an *'international debt-relief vehicle for low-income countries with unsustainable debt'*[74] does not provide any additional mechanisms for ensuring that private creditors cancel debt on the same terms as bilateral lenders. This shortcoming can lead to a situation where willing creditors end up bailing out creditors who are unwilling to take part in debt restructuring, or a situation where the debtor becomes unable to finalise a restructuring deal with anyone. The G20 has stated that private creditors should provide debt relief on at least the same terms as bilateral creditors; however the implementation of this suggestion is difficult.[75]

UK and New York legislation would aid the debt cancellation and restructuring process significantly. Specifically, this legislation would work to unblock multiple debt restructuring talks that have either stalled or not even begun due to a lack of engagement by private creditors in the G20 Common Framework and equivalent mechanisms.

For further information:
What does debt have to do with climate?, Jubilee Scotland, 2022,
https://www.jubileescotland.org.uk/what-does-debt-have-to-do-with-climate/
UK MPs call for law to make private lenders deliver debt relief, Debt Relief, 2023,
https://debtjustice.org.uk/press-release/uk-mps-call-for-law-to-make-private-lenders-deliver-debt-relief

4. Economy and Finance

The core goal of economic policy must be to achieve wellbeing for all while living within environmental limits and delivering fairness, equality, dignity, connection, participation and regenerating nature.

The focus of economic policy should be principally on the composition and direction of development, not the rate of GDP increase.

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[70] G20 debt suspension request: 90% of bonds governed by English law, Debt Justice, 2020, https://debtjustice.org.uk/press-release/g20-debt-suspension-request-90-of-bonds-governed-by-english-law

[71] The New York Taxpayer and International Debt Crises Protection Act, Jubilee USA, undated, https://www.jubileeusa.org/nylegislation

[72] UK MPs call for law to make private lenders deliver debt relief, Debt Justice, 2023, https://debtjustice.org.uk/press-release/uk-mps-call-for-law-to-make-private-lenders-deliver-debt-relief

[73] Debt Justice gave written and oral evidence to the inquiry and has seen an embargoed copy of the report.

[74] It's time to end the slow-motion tragedy in debt restructurings, World Bank Blogs, 2022, https://blogs.worldbank.org/voices/its-time-end-slow-motion-tragedy-debt-restructurings

[75] What does debt have to do with climate?, Jubilee Scotland, 2022, https://www.jubileescotland.org.uk/what-does-debt-have-to-do-with-climate/

Economic policy must prioritise meeting climate change targets, reducing use of raw materials, setting and making our country more equal (both in terms of economic outcomes, and in terms of race, gender and disability amongst other protected characteristics).

Discussions about the economy must fundamentally break with the failed economic models of the past and acknowledge and combat existing forces that continue to take the economy in the wrong direction, towards climate crisis, environmental and biodiversity breakdown and increasing inequalities. Patterns of ownership, business models and the power of rent extraction will have to be considered.

We should explore plans to empower workers so they can reduce their working time and so share work more equally across society and put a higher value on, and adequately resource, caring responsibilities of all forms.

There needs to be a different relationship between the public and the private realms. The government needs to be decisive in setting the direction of development for the economy and in showing how enterprises can and should contribute to that. Government also has a vital role in ensuring free and universal access to foundational services and the infrastructure (physical and social) that the future economy needs.

In 2022 SCCS published our 'Financing Climate Justice' report and this chapter draws on many of the policies recommended there. In particular we recommended that the Scottish Government set up an independent working group to look at the ideas and proposals for raising additional revenue and influencing behaviour in the report and advise Ministers how to take them forward, including what to include in the next Programme for Government.

The Scottish Government has recently announced an external tax stakeholder group to *"ensure our future tax strategy is informed by a broad range of views."*[76]

For further information:
Financing Climate Justice, SCCS, 2022,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf
Response to announcement about the new Economic Transformation Strategy and appointment of the Advisory Council, FoE Scotland et al, 2021,
https://www.scotlink.org/wp-content/uploads/2021/08/Statement-about-Economic-Transformation-Strategy-Aug-2021.pdf

What is a Wellbeing Economy ?

A number of members of SCCS are also members of the Wellbeing Economy Alliance Scotland[77] which describes a Wellbeing Economy thus:

A Wellbeing Economy is an economy designed to deliver good lives on a healthy planet.
The economy we have inherited is driven by a very different motive - to continually grow the economy so there are more goods and services in circulation without paying too much attention to what this means in practice for people and planet. Then governments set aside some of this money in taxes to put sticking plasters on the casualties of our economic system - such as poverty and climate breakdown.

In a Wellbeing Economy we would first ask, how can we ensure everyone has enough to live a dignified life – a life that allows us to connect with others, to participate in the decisions that affect us and to enjoy a healthy natural environment? From there we would ask, which

[76] Medium-Term Financial Strategy: Ministerial statement, Scottish Government, May 2023, https://www.gov.scot/publications/medium-term-financial-strategy-ministerial-statement/

[77] Wellbeing Economy Alliance Scotland home page, https://www.weallscotland.org

businesses and industries do we need to nurture, and which need to be scaled down? And how can we do this equitably?

In a Wellbeing Economy, we would prioritise policies that meet our fundamental human needs – not endless GDP growth for its own sake.

The five WEAll needs were co-produced with members from around the world. They echo concepts that are found in religious texts, indigenous teaching and numerous surveys about what really matters to people.

To get there, we'll need to see four big shifts in policy and practice.

4.1 Current Scottish Government Policy

The Scottish Government has often linked the economy to the pursuit of a healthy society and the protection of the environment, for example:[78]

"*Achieving a sustainable economy, promoting good governance and using sound science responsibly are essential to the creation and maintenance of a strong, healthy and just society capable of living within environmental limits.*"

The National Strategy for Economic Transformation[79] says:

"Our vision is to create a wellbeing economy: a society that is thriving across economic, social and environmental dimensions, and that delivers prosperity for all Scotland's people and places. We aim to achieve this while respecting environmental limits, embodied by our climate and nature targets."

[78] Scotland's National Marine Plan, Scottish Government, 2015, https://www.gov.scot/publications/scotlands-national-marine-plan/pages/5/

[79] Delivering Economic Propserity - the national strategy for economic transformation, Scottish Government, 2022, https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2022/03/scotlands-national-strategy-economic-transformation/documents/delivering-economic-prosperity/delivering-economic-prosperity/govscot%3Adocument/delivering-economic-prosperity.pdf

These are fine words but our continued failure to meet climate targets and the strong likelihood that we will miss future targets, demonstrate that economic policy still does not deliver on climate objectives and continues to prioritise traditional GDP growth.

The Scottish Government has also made a strong commitment to using tax to deliver on climate objectives. Its 2021 Framework for Tax[80] says *"tax policy will also play a crucial role in ensuring fiscal sustainability, tackling climate change and reducing inequality"* and aims to align tax policies with the Climate Change Plan over time. It also says: *"we will consider how the tax powers that we have could help change behaviour, supporting the transition to a net zero economy"* and *"whilst the majority of green tax powers are reserved, we will pursue changes at every level to deliver on Scotland's climate and environmental ambitions."* Positively, the Government has commissioned research to examine international evidence on the potential role of fiscal levers to deliver reductions in greenhouse gas emissions.[81]

The Resource Spending Review[82] - which sets out the parameters of spending to 2026-7 and high-level spending plans - has the climate and nature crises as one of its five priorities, saying *"the spending review comes at a critical point in the global challenge to address the climate crisis, adapting to the impacts of the irreversible change that is already evident and seeking to mitigate the extent of future change through a Just Transition."*

A recent Reform Scotland report[83] finds that the Scottish Government undertakes only a limited assessment of the consumption-based carbon emissions associated with spending in the Scottish Budget and has *"not, as yet, included a more comprehensive assessment or extended this to include the impact of revenue-raising."* It also recommends that fiscal policies should all be assessed for their impact on climate change.

In their report on a Green Recovery[84] the Scottish Parliament's Environment, Climate Change and Land Reform Committee recommended wider application of 'conditionality' to public funding:

"The Committee recommends any model for future funding support to business and the third sector must consider conditionality and opportunities to include measures which relate to supporting the delivery of social and environmental objectives. Specifically, the Committee recommends that, where appropriate, support should be conditional on action to reduce emissions in alignment with any route-map to net-zero, and a green recovery. Sectors which require urgent action in this regard are fossil fuel extraction and use, transport, agriculture and manufacturing."

and

"The Committee recommends public funding must be accompanied by a published set of conditions on achieving relevant public objectives (e.g. net-zero, biodiversity, fair work, diversity and inclusion, circular economy). All applications for funds must include an action

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[80] Framework for Tax 2021, Scottish Government, 2021, https://www.gov.scot/publications/framework-tax-2021/

[81] Tender: International evidence on the potential role of fiscal levers to deliver reductions in greenhouse reductions, Scottish Government, May 2023, https://www.publiccontractsscotland.gov.uk/search/show/search_view.aspx?ID=MAY479172

[82] Investing in Scotland's Future: Resource Spending Review, Scottish Government, 2022, https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2022/05/investing-scotlands-future-resource-spending-review/documents/investing-scotlands-future-resource-spending-review/investing-scotlands-future-resource-spending-review/govscot%3Adocument/investing-scotlands-future-resource-spending-review.pdf

[83] Taxing Times: Why Scotland needs new, more and better taxes, Reform Scotland, 2022, https://reformscotland.com/wp-content/uploads/2022/07/Taxing-Times-Why-Scotland-needs-new-more-and-better-taxes.pdf

[84] Green Recovery report, Environment, Climate Change and Land Reform Committee, 2020, https://sp-bpr-en-prod-cdnep.azureedge.net/published/ECCLR/2020/11/8/Green-Recovery-Inquiry---Report/ECCLRS0520R12.pdf

plan to achieve the conditions, with the detail proportionate to the scale of funding. Action plans should be publicly available, where appropriate."

4.2 Policies

4.2.1 Strategic approaches

Deliver climate-friendly economic policy

Prepare a new Economic Strategy to deliver on Scotland's legal climate change targets.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Scotland's Economic Strategy is not directing sufficient investment into the Just Transition to a zero-carbon economy to meet the targets in the Climate Change Act. The climate and nature emergencies require that the objectives and priorities of economic policy are changed. The move towards a circular economy, exit from the EU and aspirations towards a Wellbeing Economy give further cause for a revision of the way in which economic development is managed.

Therefore, a new Economic Strategy is needed which must deliver this Just Transition, effectively combining environmental and social objectives. An integrated industrial strategy would tackle climate change and the energy crisis and create well paid jobs, including through investment in quality social infrastructure, including care, essential to supporting the economy.[85] The economic and industrial strategies should chart the path to a decarbonised economy with lower resource footprints which will reduce social inequalities and protect biodiversity. And it will need to make sure Scotland can adapt to the changing climate in a fair and equitable way.

A requirement should be introduced in annual budgets to evidence the proportion of committed spend which could be defined as 'in the benefit of future generations.' (See also Sustainable Wealth Fund policy).

When this is done, it should present a vision of a country which emits no net greenhouse gases, strives for the wellbeing of all its citizens and ceases to damage its environment, and a clear route map to get to that point.

For further information:
Financing Climate Justice,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf
See also policy on the 'Wellbeing and Sustainable Development Act' in the Cross-Cutting Policies chapter.

Deprioritise economic growth, as measured by GDP

[85] Social infrastructure is the keystone to a healthier, happier, greener and more productive Scotland - STUC/SWBG, Scotsman, 2022, https://www.scotsman.com/news/opinion/social-infrastructure-is-the-keystone-to-a-healthier-happier-greener-and-more-productive-scotland-stucswbg-3778634 & There is no Just Transition without social infrastructure, Katie Gallogly-Nelson, Scottish Left Review, 2022, https://www.scottishleftreview.scot/there-is-no-just-transition-without-social-infrastructure/

Deprioritise economic growth, as measured by GDP, as a means of measuring national wellbeing, and decisively shift the focus of policy and spending decisions to the pursuit of richer measures of national wellbeing, including the protection of the environment.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

For too long, in Scotland and globally, measurement of a nation's progress has been dominated by the pursuit of growth, as measured by Gross Domestic Product (GDP), irrespective of how carbon-intensive that growth is, or who benefits from it.[86] Too often, it is seen as a goal in and of itself, rather than a means of delivering societal outcomes. It has long been and is increasingly acknowledged that GDP is a problematic and poor measurement of success, yet GDP seems, if anything, to be tightening its grip on decision making.[87] The vested interests of leaders within governments and the private sector who have, and continue to gain, from the status quo are seemingly too powerful.

Internationally, the European Parliament held a useful 'Beyond Growth' conference in May 2023[88] but alternatives to GDP are mostly on paper only. There is near global consensus that GDP is not fit for purpose yet huge amounts of academic and policy attention have not succeeded in producing much more than paper tigers with a few notable, but relatively small-scale, and still developing, exceptions.

Scotland's National Performance Framework (NPF) is one such example - it is a step in the right direction. But Scotland's journey is far from complete. The NPF can and should provide us with an alternative narrative that shifts the emphasis away from GDP. By doing this, the framework has the potential to do much more to support the transition to a wellbeing economy.

At the time of writing, the Scottish Government is undertaking its quinquennial review of the National Outcomes, creating an opportunity to enhance and clarify the overarching purpose of the NPF as Scotland's 'National Wellbeing Framework.' This should build on the welcome addition during the last review in 2018 of the 'purpose' statements, and specifically the aim to: *"increase the wellbeing of people living in Scotland."* Critically, there should be meaningful differentiation between this core purpose and the means of achieving it. Specifically, the current aim *"to create sustainable and inclusive growth"* is a means to support national wellbeing, not an end in itself, and it therefore has no place in the purpose statement. The existing focus on GDP-growth is directly driving the very policies, practices and behaviours that are pushing the world towards greater human exploitation and environmental catastrophe.

Furthermore, the way performance within the NPF is categorised as 'maintaining', 'worsening' or 'improving' is also, at times, misleading and unhelpful. This is particularly true for climate related indicators which have continuously shown an 'improving' rating. While it is true that Scotland's emissions are falling, the Scottish Government has missed seven out of the last 11 annual emission reduction targets. This is creating a perverse mismatch between missed emission reduction targets and the National Indicator used within the NPF. This risks creating a perception that the Scottish Government is seeking to paint an overly positive picture. To resolve this, indicators of progress must be linked to the delivery of the statutory targets.

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[86] An Economy for the 99%, Oxfam, 2017, https://www-cdn.oxfam.org/s3fs-public/file_attachments/bp-economy-for-99-percent-160117-en.pdf

[87] For instance, as far back as 1968 Robert Kennedy said that GNP (the US version of GDP) *"measures everything in short, except that which makes life worthwhile"* https://www.jfklibrary.org/learn/about-jfk/the-kennedy-family/robert-f-kennedy/robert-f-kennedy-speeches/remarks-at-the-university-of-kansas-march-18-1968

[88] The European Parliament 'Beyond Growth' conference: https://earth4all.life/events/beyond-growth-conference/ and research paper: Beyond growth - pathways towards sustainable prosperity, European Parliament, May 2023, https://www.europarl.europa.eu/RegData/etudes/STUD/2023/747108/EPRS_STU(2023)747108_EN.pdf

Alongside the review of the national outcomes, the former Deputy First Minister John Swinney pointed towards the upcoming Wellbeing and Sustainable Development Bill (see section 2.1.2) as a vehicle to strengthen the role of the NPF and to narrow the distance between the national outcomes and their implementation.

The Scottish Government should:

- more fully acknowledge the social and environmental harm of perusing policies of exponential and endless economic growth
- review inconsistencies in its economic and environmental policies around growth
- begin a national conversation on the potential merits of post-growth measures and how they could be acted on

Multidimensional wellbeing indicators (including reductions in environmental damage and restoring biodiversity) should be prioritised, rather than GDP growth for its own sake (or as a proxy for other goals with the assumption that GDP growth will automatically bring attainment of these goals). Ideally, this change would include developing a headline measure of progress beyond GDP growth that represents the broader concerns of human and ecological wellbeing.

This is a critical step to achieve progress in reducing multiple inequalities.

For further information:
Radical Pathways Beyond GDP: Why and how we need to pursue feminist and decolonial alternatives urgently, Oxfam, August 2023, https://policy-practice.oxfam.org/resources/radical-pathways-beyond-gdp-621532/
Briefing on the member's bill being developed by Sarah Boyack MSP, ahead of the Scottish Government introducing its own Wellbeing and Sustainable Development Bill, Oxfam, March 2023, https://oxfam.box.com/s/8meitezd3myofaxyzgzlgzv04f9hlsiv
An Economy for the 99%, Oxfam, 2017, https://www-cdn.oxfam.org/s3fs-public/file_attachments/bp-economy-for-99-percent-160117-en.pdf
2021-2026 Policy Priorities for Scotland, SIDA, 2021, https://www.intdevalliance.scot/how-we-help/2021-scottish-election
See also 'An ambitious and impactful Wellbeing and Sustainable Development Act' in the Cross-cutting policies chapter.

Place net zero at the heart of infrastructure investment

Place Net Zero at the heart of Scottish infrastructure investment and abolish the use of Public Private Partnerships going forward.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

Scotland aims to reach net zero emissions by 2045. As part of this plan the Government has committed £1.8bn to *"transform our homes and buildings over the next Parliament."* It is essential that this investment is used wisely and not necessarily just to build new infrastructure. Local authorities often turn to Public Private Partnerships (PPP) to finance much needed public infrastructure, however as well as the exorbitant cost and poor value for money, these financing models can lead to poor quality, short-lived new buildings when existing buildings could have been retrofitted and repurposed.

Within PPP contracts, private companies need to ensure profits for their stakeholders, meaning their design and construction decisions are not necessarily based on Net Zero principles or even on creating sustainable, enduring buildings. Contractors have historically had no interest in old buildings being repaired and repurposed, as this does not promise the big financial rewards sought by these companies. Many buildings around Scotland have stood the test of

time – repairing and retrofitting them could be the most sensible and sustainable solution and may avoid the additional carbon emissions created through initial construction and replacement of PPP schools, hospitals and other public buildings.

The Scottish Government needs to place Net Zero at the heart of public infrastructure investment. Abolishing the use of Public Private Partnerships going forward, and seeking an alternative financing model, will remove excessive private profits from the equation and ensure decisions are instead based on sustainability and creating infrastructure that is fit for purpose for communities and the planet.

In addition, the UK Government should invest at least £30bn a year in green projects to create jobs and put the country on track to achieve its climate targets.[89] This investment should address the inequalities and deprivation that have been made worse by the pandemic.

Co-benefits include economic and social justice - Public Private Partnerships (PPPs) have, in all their forms, saddled the Scottish public sector with high levels of debt, poor service provision, lack of accountability, and in some cases, projects financed by PPPs have resulted in unsafe buildings.[90] In ensuring public funds are invested responsibly we could ensure more money is available for fair wages for those who provide our services such as teachers, carers, nurses and doctors.

For further information:
Position paper about abolishing Public Private Partnerships and a possible alternative, Jubilee Scotland, 2023,
https://www.jubileescotland.org.uk/wp-content/uploads/2023/03/PPP-Position-Paper_28_03_23.pdf, p.18
PPPs Hampering Net Zero Ambitions, Jubilee Scotland, February 2023,
https://www.jubileescotland.org.uk/ppps-hampering-net-zero-ambitions/
Jubilee Scotland campaign page,
https://www.jubileescotland.org.uk/financing-public-scotland-a-proposal-for-an-alternative-to-public-private-partnerships/

Invest for the future: Sustainable Wealth Fund

The Scottish and/or UK Government should explore, develop and implement new funds to ensure a share of revenues from the transition to renewables are invested for climate action both in the near- and longer-terms, including examination of proposals for a Sustainable Wealth Fund or Future Generations Fund.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

The Royal Scottish Geographical Society has suggested the creation of a Sustainable Wealth Fund or Future Generations Fund in Scotland, mirroring the $1trillion fund in Norway generated from oil revenues. Tax revenues from renewables could flow into this Scottish Fund, and then be used to support climate action now and for future generations.

Fossil fuel heavy industries – oil, aviation, cement, etc – would be challenged to "kick-start" the fund with voluntary contributions in the short term. These contributions could also be

[89] UK MPs call for extra £30bn to aid green recovery from Covid-19, Guardian, 2020, https://www.theguardian.com/world/2020/may/27/uk-green-recovery-covid-19-mps-climate-nature

[90] For example, Defects found at 72 more Scottish school buildings, BBC, 2017, https://www.bbc.co.uk/news/uk-scotland-scotland-politics-39580308

generated through one-off or on-going fiscal measures, although the latter could tempt the government to resist phasing out fossil fuel industries.

For further information:
A Sustainable Wealth Fund to Fuel Transition, Royal Scottish Geographical Society, 2019, https://www.rsgs.org/blogs/rsgs-blog/a-sustainable-wealth-fund-to-fuel-transition
Financing Climate Justice, https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

4.2.2 Funding climate action

Make Polluters Pay

To ensure action to reduce emissions in Scotland delivers climate justice, it should be funded through UK and Scotland-level actions which embed the polluter pays principle while mitigating any potential regressive impacts.

☐	International	☑	UK Govt	☑	Scottish Govt	☑	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

As recommended in the 2022 SCCS Financing Climate Justice report: progressive use of general taxation should be the primary means to raise significant additional money to invest in climate action and reduce inequalities. This approach should reflect evidence showing that, on average, those with higher incomes and wealth have higher emissions. In 2020, Oxfam estimated that the wealthiest 1% of people in the UK each emitted 11 times the carbon emissions of someone in the poorest half of the population, and that their carbon footprint was six times the national average.[91]

Targeting higher incomes and wealth would not only be a means of making polluters pay but, given these individuals also have the greatest capacity to pay, it would also promote social justice while supporting efforts to narrow economic inequality. Our report on Financing Climate Justice looked at wealth taxes as they might be applied in Scotland or the UK as a whole.[92]

However, beyond raising finance through the progressive use of general taxation, wider fiscal measures to raise additional finance could also include taxation of high-polluting activities. Oxfam is currently modelling the potential impact of several such measures in the UK level, including:

1. an effective tax on excessive UK fossil fuel profits
2. redirecting UK fossil fuel producer subsidies
3. a frequent flyer levy
4. taxing high-carbon luxury goods, such as private jets

While action in these areas may be simplest, and most effective, at UK level, there are also opportunities to make progress using devolved powers in Scotland. For example, the devolution of Airport Departure Tax to Scotland could create opportunities to pilot a frequent flyer levy in Scotland, and/or to impose higher rates for private jets landing at Scottish airports. See the policy 'Introduce a frequent flyer levy' in the Transport chapter.

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[91] Wealthiest Brits have a carbon footprint 11 times that of someone in the poorest half of society, Oxfam, 2020, https://www.oxfam.org.uk/media/press-releases/wealthiest-brits-have-a-carbon-footprint-11-times-that-of-someone-in-the-poorest-half-of-society/

[92] Financing Climate Justice - fiscal measures for climate action in a time of crisis, Stop Climate Chaos Scotland, 2022, p.26, https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

Of course, action to make polluters pay must particularly target those with the greatest responsibility for causing harm. For example, the five biggest fossil fuel companies are collectively responsible for 11.4% of global historic CO_2 emissions.[93] Despite this, the rules of the global economy have allowed these same companies to make $195 billion in profits in 2022, while many in the world - and particularly the Global South - faced increased chaos and devastation from the impacts of the climate emergency combined with a cost of living crisis.

In support of reparative climate justice and a partial atonement for this climate debt, the operations of fossil fuel corporations must be drastically reduced, while 'climate justice taxes' should be introduced on corporate profits, carbon emissions and financial transactions supporting fossil fuel companies.

While the Scottish Government's own ability to tax the big polluters is very limited, it should call on the UK government to do so, including directly and through international collaboration.

For further information:
Financing Climate Justice - fiscal measures for climate action in a time of crisis, Stop Climate Chaos Scotland, 2022,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf
Making Polluters Pay: Estimates for corporate climate debt and reparations, Global Justice Now, 2022,
https://www.globaljustice.org.uk/resource/making-polluters-pay-estimates-for-corporate-climate-debt-and-reparations/

Fund faster climate action from progressive general taxation complemented by environmental taxes to change behaviours

Funding for measures to address the climate emergency should come from progressive forms of general taxation. Complementary specific environmental taxes are useful where they bring about behaviour change which reduces emissions.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Work like the 2006 Stern Review[94] on the economics of climate change showed that it is the environment that underpins the economy and acting today on climate change is much cheaper than waiting to act when the situation is much worse. The review found that spending 1% of GDP a year could avert the worst of the climate crisis, whereas waiting to act could mean spending 20% of GDP in future to cope with the damage from climate change *and* reduce emissions. In 2008, Stern recalculated the necessary spend to be 2% of GDP.[95]

For comparison, Scotland's GDP in 2019, the last pre-COVID-19 year, was nearly £170bn, so if Stern's 2% number is applied to Scotland,we should be spending £3.4bn a year on tackling climate change. Common Weal's detailed Green New Deal plans in Our Common Home[96] are costed at £5bn a year.

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[93] Making Polluters Pay: Estimates for corporate climate debt and reparations, Global Justice Now, 2022, https://www.globaljustice.org.uk/resource/making-polluters-pay-estimates-for-corporate-climate-debt-and-reparations/

[94] The Economics of Climate Change, Nicholas Stern, 2006, see https://www.lse.ac.uk/granthaminstitute/publication/the-economics-of-climate-change-the-stern-review/

[95] Cost of tackling global climate change has doubled, warns Stern, Guardian, 2008, https://www.theguardian.com/environment/2008/jun/26/climatechange.scienceofclimatechange

[96] A real Green New Deal for Scotland, Common Weal, 2020, https://commonweal.scot/big-ideas/a-real-green-new-deal-for-scotland/

The commitments listed as relating to climate change in the 2022-3 Scottish Budget total £2.86bn, with half of this being investment in rail network infrastructure and decarbonisation.[97] This sounds impressive but still falls considerably short of Stern's 2% target level and is demonstrably insufficient given we have missed a series of annual emission reduction targets, and the Climate Change Committee says we are off track to meet our future annual targets up to, and probably including, 2030.

The climate threat is so significant that both the Scottish Government and the UK Parliament formally recognised that there is a 'climate emergency' in 2019.[98] Dealing with an 'emergency' should be a national priority. It should mean doing lots of things differently. Dealing with the climate emergency is also an enabler in delivering on other national priorities, including reducing the burden on the NHS caused by temperature extremes, making our transport system fairer, eradicating fuel poverty and driving the Just Transition for oil-dependent communities and workers.

Since it is a national priority, funding for action to reduce emissions and to fund our international climate obligations should mostly come from general taxation - a relatively stable and predictable source of finance. Where specific environmental taxes, levies, charges or other measures are applied, this should be predominantly because they will help bring about the desired behaviour change for an orderly transition, with any revenue generated as a result being an added benefit.

This is the case for other national priorities. For instance, the NHS is funded almost entirely from general taxation. Where there are health-related fiscal measures, like the duty on cigarettes, the sugar tax or the minimum price for a unit of alcohol, the primary purpose is to change behaviours away from behaviours which are bad for health. The Office for Budget Responsibility estimates tobacco duties will raise nearly £11bn for the government in 2022/23[99] but none of this is specifically reserved for the NHS, despite smoking imposing a £2.5bn cost on the service. The minimum price for alcohol does not provide an income stream to the government, instead it is expected to boost income to the drinks industry. However, this measure is seen as a means of encouraging a reduction in alcohol consumption, thereby boosting public health and reducing the knock-on impact upon the NHS.

So we fund the NHS from general taxation because it is a national priority for us. We have relevant taxes, levies, charges and minimum prices because they help drive behaviour towards better health outcomes. This is also the approach the Scottish Government should take to action on climate change.

For further information:
Financing Climate Justice,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

4.2.3 Support climate-friendly businesses

Support Fair Trade businesses

[97] Scottish Budget: 2022-23, Scottish Government, 2021, https://www.gov.scot/binaries/content/documents/govscot/publications/corporate-report/2021/12/scottish-budget-2022-23/documents/scottish-budget-2022-23/scottish-budget-2022-23/govscot%3Adocument/scottish-budget-2022-23.pdf

[98] Nicola Sturgeon declares 'climate emergency' at SNP conference, BBC, 2019, https://www.bbc.co.uk/news/uk-scotland-scotland-politics-48077802 & UK Parliament declares climate change emergency, BBC, 2019, https://www.bbc.co.uk/news/uk-politics-48126677

[99] Tobacco duties, Office for Budget Responsibility, 2022, https://obr.uk/forecasts-in-depth/tax-by-tax-spend-by-spend/tobacco-duties/

Ensure Scotland's status as a 'Fair Trade Nation' is developed by supporting Fair Trade businesses as a key part of wider initiatives to support social enterprises and small businesses.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Fair Trade businesses have Sustainable Development Goal 12[100] at their core – through their commitment to responsible consumption and production. Doing trade and business differently – not just being driven by profit maximisation – brings with it extra costs, for instance, advance payments to suppliers, adding burdens to Fair Trade businesses that 'conventional' businesses do not face. Therefore support for Fair Trade businesses is required to allow them to compete on a level playing field.

A commitment to Fair Trade is essential to ensure our positive contribution internationally. Maintaining, developing and promoting Scotland's commitment to being a 'Fair Trade Nation' is a key way of achieving this. This includes continued support for the Fair Trade grassroots network of campaigners and businesses, recognising the importance of Fair Trade small and medium-sized enterprises (SMEs) in Scotland and the potential for growth of this area of business.

See also 'Public sector commitment to the Fair Trade Nation' policy in the Public Sector chapter.

For further information:
2021-2026 Policy Priorities for Scotland, SIDA, 2021,
https://www.intdevalliance.scot/how-we-help/2021-scottish-election
Business and Fair Trade, Scottish Fair Trade Forum,
https://www.scottishfairtradeforum.org.uk/get-involved/business-and-procurement/business-and-fair-trade/

Support sustainable tourism

Adaptation plans and Just Transition plans must more clearly include rural tourism and the Rural Tourism Infrastructure Fund should be re-targeted to deliver carbon reductions.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

The World Tourism Organization defines sustainable tourism as "tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities"[101].

Rural tourism somewhat falls between areas mentioned in Government plans and Committee on Climate Change (CCC) reviews but never really gets fully covered, either adaptation or mitigation. It is recognised by CCC that rural communities are particularly vulnerable to e.g. transport difficulties such as increased landslides. Funding should be put in place to support resilient, low-carbon infrastructure, particularly transportation.

There is Rural Tourism Infrastructure Fund (RTIF) but it is funding car-based infrastructure - *'sustainable visitor infrastructure at Glencoe'* seems to be car parks and for '*improved visitor*

[100] UN: SDG 12 is about "ensuring sustainable consumption and production patterns, which is key to sustain the livelihoods of current and future generations. Unsustainable patterns of consumption and production are root causes of the triple planetary crises of climate change, biodiversity loss and pollution."
[101] https://www.unwto.org/sustainable-development

infrastructure along the A82' the project will *'improve car parking provision at the Three Sisters.'*

Glenshee improvements at least include a charge point and cycle facilities: *"Replacement of the current toilets... The project will also provide a grey and wastewater disposal point for motorhomes, new cycle facilities and an EV charge point."*

But there is little or no investment to introduce renewables or improve grid capacity so that diesel generators can be phased out, or investment into improved public transport options. So the Scottish Government should re-target the RTIF to deliver carbon reductions.

This policy would support jobs, and climate justice for rural communities.

For further information:
Letter to Minister for Business, Trade, Tourism and Enterprise
https://drive.google.com/file/d/1TioPzw1AsABiRpvkR8pqixuEzBQVrA3M/view?usp=drivesdk
Minister's response
https://drive.google.com/file/d/1S1LiSyxOoSzRB28P7N4XnOYkyBbtO0AZ/view?usp=share_link

5. Energy including electricity

Emissions from the Energy Sector cover emissions from fuel combustion for electricity and other energy production sources, and fugitive emissions from fuels.[102] Emissions fell 77% between 1990 and 2021.[103]

The electricity sector is a big success story in Scotland in reducing emissions, thanks to the growth of renewable energy and the closure of Scotland's two coal-fired power stations. Electricity accounts for about a fifth of our energy use, and non-electricity energy use also appears in other sections of this report. An urgent priority is to accelerate the transition from fossil fuels to renewable electricity in every application that we can, especially in building and water heating, and transport.

In the midst of an energy cost of living crisis it is galling to realise that Scotland ought to be well placed to avoid the worst of the price rises. Our electricity industry has been through a major transition away from fossil fuels, with renewable energy schemes supplying the equivalent of 97% of our electricity demand in 2020. However, electricity is traded regionally and internationally. Therefore, the price of UK grid electricity is closely related to the rising cost of gas, even though Scotland's one remaining fossil-fuel power station – the gas-fired station at Peterhead – produces rather little of our electricity. Because electricity prices are artificially high the Treasury predicts that UK gas producers and electricity generators may make £170bn in excess profits over a two year period.[104] Similarly, we have our own oil industry and their costs have not risen significantly, but this has been no buffer to big increases in the price of road fuels and gas for heating because oil and gas are also internationally-traded commodities.

[102] The emissions from the oil and gas industry that take place offshore are not included in Scotland's totals. In 2020 this came to an additional 3.6MtCO_2e for venting and flaring from offshore installations and most of another 3.8 MtCO_2e from exploration, production and transport of oil and gas.
[103] from figures in Scottish Greenhouse Gas Statistics 2021, Scottish Government, 2023, https://www.gov.scot/binaries/content/documents/govscot/publications/statistics/2023/06/scottish-greenhouse-gas-statistics-2021/documents/scottish-greenhouse-gas-statistics-2021/scottish-greenhouse-gas-statistics-2021/govscot%3Adocument/scottish-greenhouse-gas-statistics-2021.pdf
[104] UK Sees Up to £170 Billion Excess Profits for Energy Firms, Bloomberg, 30 August 2022, https://www.bloomberg.com/news/articles/2022-08-30/uk-predicts-up-to-170-billion-excess-profits-for-energy-firms

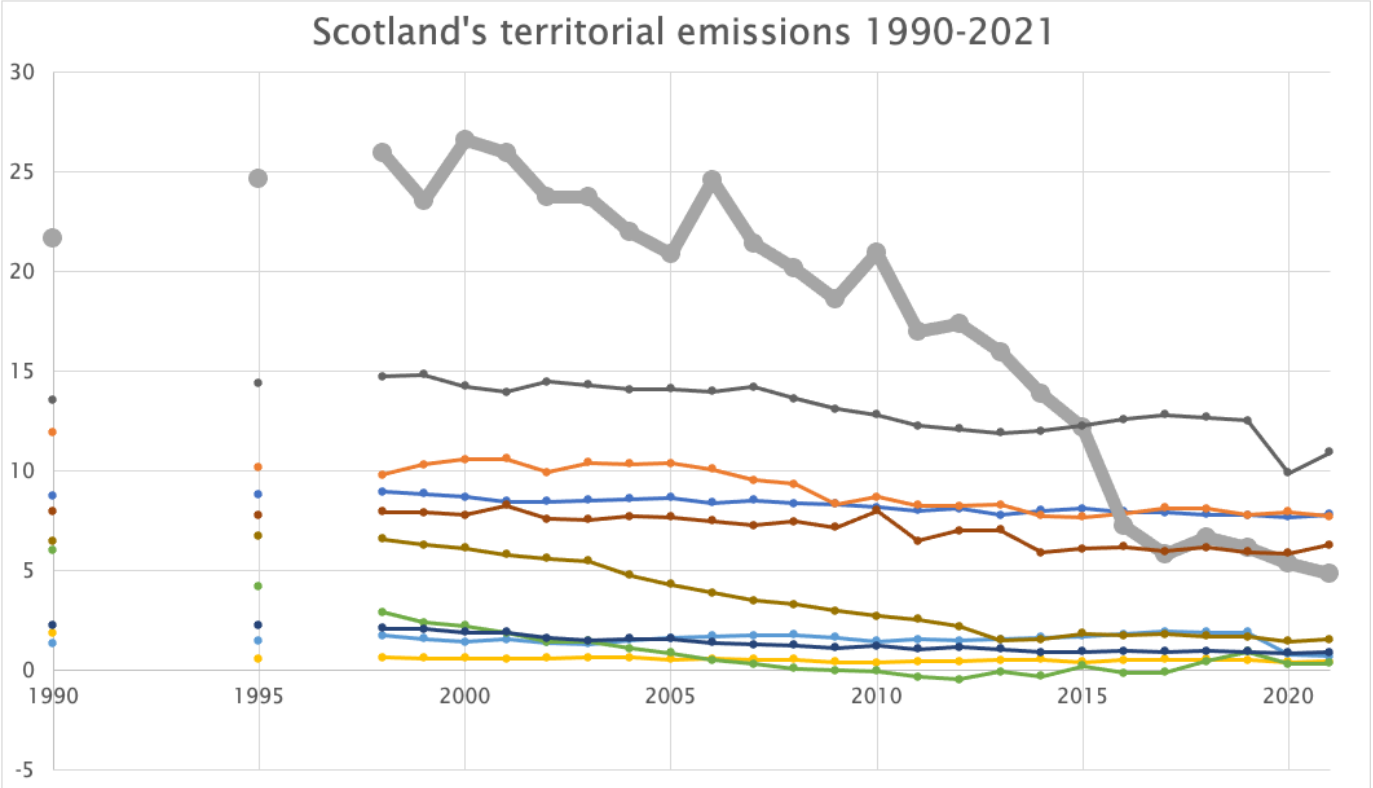

Figure 7: emissions in $MtCO_2e$ from the energy sector 1990-2021, showing a fall of 77%

The main barriers to further climate progress in the energy sector include the proposed new gas-fired power station at Peterhead, which could see both the old and new plants running with neither of them capturing any carbon, the potential rebuild of the Grangemouth oil refinery and the slow speed of renewables deployment. Further barriers are the lack of a finalised Just Transition plan to support workers in shifting from high carbon energy sector jobs, and the slow pace of new job creation in renewable energy supply chains in Scotland and the UK. The renewables industry says there is no shortage of investment capital but that central and local government processes can take a long time, pointing to a lack of capacity among local authorities and statutory consultees.

5.1 Current climate plan

The Climate Change Plan update, in its chapter about electricity, lists three outcomes along with policies and proposed policies supposed to deliver them:

Outcome 1: The electricity system will be powered by a high penetration of renewables, aided by a range of flexible and responsive technologies.
Outcome 2: Scotland's electricity supply is secure and flexible, with a system robust against fluctuations and interruptions to supply.
Outcome 3: Scotland secures maximum economic benefit from the continued investment and growth in electricity generation capacity and support for the new and innovative technologies which will deliver our decarbonisation goals.

The Plan shows emissions from electricity generation declining and then becoming strongly negative from 2029 (the graph published in the CCPu only shows the positive emissions out to 2028 but not the negative emissions after this date, although these are included in the listed annual overall totals). The plan also says *"the development of carbon capture and storage and NETs will mean that the electricity system in 2032 could potentially deliver negative emissions."*

Both the Committee on Climate Change[105] and the Scottish Government's own progress monitoring[106] have said that this is very unlikely to happen on this timescale.

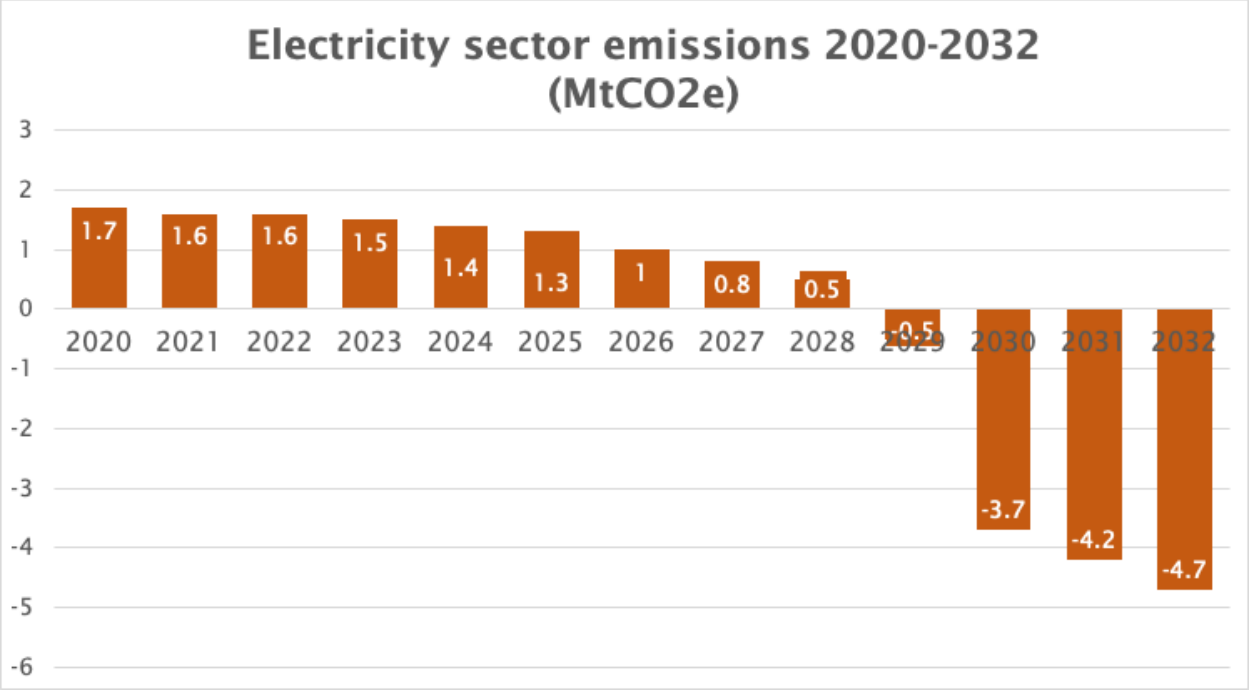

Figure 8: expected climate change emissions from the electricity sector 2020-2023

At the time of writing the Scottish Government was consulting on its draft Energy Strategy and Just Transition Plan.[107] The draft Energy Strategy predicts improvements in the efficiency of using energy in heating buildings, transport, industry and agriculture by 2030. It also sets a goal of a largely decarbonised energy sector by 2030, so much less of this will be from fossil fuels; electricity use in Scotland is therefore predicted to increase by 60% by 2030 and by 85% by 2045, from 2020 levels.

5.2 Policies

5.2.1 Fossil fuels

Set an end date for fossil fuel production and use, and end all new licensing

Set an end date for fossil fuel use and commit to phasing out oil and gas production as quickly as possible, acknowledging that research by the Tyndall Centre found that fossil fuel extraction in producer countries, including the UK, would need to be phased out by 2031 for a 67% chance of staying below 1.5ºC global temperature rise.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

[105] Progress reducing emissions in Scotland – 2021 Report to Parliament, Climate Change Committee, 2021, https://www.theccc.org.uk/publication/progress-reducing-emissions-in-scotland-2021-report-to-parliament/

[106] Climate Change Plan Monitoring Reports, Scottish Government, 2022, https://www.gov.scot/binaries/content/documents/govscot/publications/progress-report/2022/05/climate-change-plan-monitoring-reports-2022/documents/climate-change-plan-monitoring-reports-2022/climate-change-plan-monitoring-reports-2022/govscot%3Adocument/climate-change-plan-monitoring-reports-2022.pdf

[107] Draft Energy Strategy and Just Transition, Plan, Scottish Government, January 2023, https://www.gov.scot/publications/draft-energy-strategy-transition-plan/documents/ & SCCS response https://www.stopclimatechaos.scot/wp-content/uploads/2023/05/SCCS-ESJTP-response-May-2023.pdf

Alongside maximising the transition to clean, renewable energy sources, the Scottish Government should adopt an unequivocal policy position against the granting of any new licences for offshore or onshore oil and gas exploration or extraction, and set a date for the most rapid possible end of fossil fuel production in Scotland.[108] The Scottish Government must use the many devolved powers at its disposal to shift energy generation and energy consumption to as close to fully renewable within the same timeframe.

While powers over offshore fossil fuel extraction remain reserved, taking this position can exert influence at the UK level and show leadership beyond. The Scottish Government must also cease to support such activity through any devolved means available, such as enterprise funding, and Crown Estate licensing and planning.

Scotland needs a managed and just wind down of North Sea oil and gas production as quickly as possible in line with keeping the temperature rise to below 1.5ºC and an equitable approach to the UK's historic responsibility for the climate crisis. Research by the Tyndall Centre concluded that oil and gas production in developed countries should end completely in 2031 for a 67% chance of the world staying below a long-term temperature rise of 1.5ºC.[109]

The Scottish Government should immediately start planning for a credible managed wind down as part of a Just Transition, with trade unions and communities fully involved in agreeing timescales. The Scottish Government must take an interventionist approach to ensure a Just Transition, utilising all powers at their disposal to prioritise the creation of decent jobs in renewables and energy efficiency, and put in place strong safeguards for impacted workers transferring from oil and gas jobs to renewables and other work.

The UK Government should end the approval of any new licences for oil and gas exploration or extraction, including the 22 new projects in currently licensed areas and the 100 for new fields. The UK Labour Party have recently pledged to rule out new licences.[110]

The Scottish Government should also maintain its policy ban on all forms of onshore unconventional oil and gas production, including fracking.

A clear stance against new oil and gas would provide strong impetus towards a Just Transition.

For further information:
SCCS briefing: A managed wind down of North Sea oil & gas production in line with a Just Transition, October 2022,
https://www.stopclimatechaos.scot/wp-content/uploads/2023/01/SCCS-briefing-a-managed-wind-down-of-North-Sea-oil-and-gas-production-in-line-with-a-Just-Transition.pdf

Remove fossil fuel subsidies

Remove tax breaks and other subsidies from the fossil fuel industry, including those for decommissioning, and spend this money on activities to support climate justice.

☐	International	☑	UK Govt	☐	Scottish Govt	☐	Local Authorities

[108] Around 3% of global oil and gas production is used in the manufacture of medicines. There are alternatives to using fossil fuels which mean there is no need to prolong the life of the industry for this application, see, for example, Defossilization of pharmaceutical manufacturing, Green and Sustainable Chemistry, 2022, https://www.sciencedirect.com/science/article/pii/S2452223621001425

[109] Phaseout Pathways for Fossil Fuel Production, Tyndall Centre, 2022, https://research.manchester.ac.uk/en/publications/phaseout-pathways-for-fossil-fuel-production-within-paris-complia

[110] Labour confirms plans to block all new North Sea oil and gas projects, Guardian, May 2023, https://www.theguardian.com/politics/2023/may/28/labour-confirms-plans-to-block-all-new-north-sea-oil-and-gas-projects

☑	Emissions reduction	☑	Behaviour change

The offshore oil industry pays little tax because they receive very large tax breaks, including to fund the decommissioning of rigs and pipelines, and for further exploration. The UK's domestic fossil fuel subsidies are estimated at £13.6 billion a year, most of this as tax reductions.[111] The same analysis ranked the UK 11th out of 11 OECD countries for transparency on fossil fuel funding. The result is that the UK has one of the lowest effective tax rates on offshore oil and gas profits in the world, with the Treasury receiving less than $2 a barrel in 2019 compared to the nearly $22 for every barrel in Norway.[112] This subsidy massively undermines the UK's stated goals on climate change.

The Observer found that Shell and BP paid no corporation tax or production levies on North Sea oil operations between 2018 and 2020, while claiming tax reliefs of nearly £400m.[113]

The UK Government has introduced a temporary Energy Profits Levy, but this also gives an 80% exemption for companies that invest in further oil and gas production, thus creating *another* tax break which incentivises creating *extra* climate change emissions.[114]

The cost of decommissioning the oil industry structures in UK waters is officially estimated to be nearly £50bn.[115] Unlike for almost any other industry, the UK Government is committed to paying a large fraction of this cost from the public purse – currently estimated at over £18bn[116] - by giving up to 70% tax breaks to the industry for decommissioning work. Of course, for any company that goes bust, the taxpayer will pay the whole bill.

Removing subsidies for the oil and gas industry would free up tens of billions to use elsewhere. Safeguards would be needed to ensure the loss of subsidies was not simply recouped from higher prices. These changes would no doubt be phased in over time and would need to be firmly linked to the Just Transition for workers and communities dependent on the industry.

For further information:
Financing Climate Justice, SCCS, 2022,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf
Sea Change: Climate Emergency, Jobs and Managing the Phase-Out of UK Oil and Gas Extraction, Friends of the Earth Scotland, Oil Change International and Platform, 2019,
https://foe.scot/resource/sea-change-climate-report/

End support for overseas fossil fuel projects

End UK and international support for fossil fuels overseas.

☑	International	☑	UK Govt	☐	Scottish Govt	☐	Local Authorities

[111] 2017-19 average from G20 Scorecard of Fossil Fuel Funding – UK Summary, IISD, 2020, https://www.iisd.org/system/files/2020-11/g20-scorecard-united-kingdom.pdf
[112] Only 6 months left till COP26. What must the UK do to make it a success?, Oil Change International, 11 May 2021, https://priceofoil.org/2021/05/11/uk-needs-to-act-on-oil-and-gas/
[113] Shell and BP paid zero tax on North Sea gas and oil for three years, the Observer, 2021, https://www.theguardian.com/business/2021/oct/30/shell-and-bp-paid-zero-tax-on-north-sea-gas-and-oil-for-three-years
[114] Sunak's windfall tax is a 'sticking plaster', say climate campaigners, Guardian, 26 May 2022, https://www.theguardian.com/business/2022/may/26/rishi-sunak-windfall-tax-sticking-plaster-climate-groups
[115] Decommissioning cost estimate, North Sea Transition Authority, 2021, https://www.nstauthority.co.uk/decommissioning/cost-estimate/
[116] Estimates of the Remaining Exchequer Cost of Decommissioning UK Upstream Oil and Gas Infrastructure, North Sea Transition Authority, 2021, https://www.nstauthority.co.uk/media/7695/exchequer_cost_decommissioning_july_2021.pdf

☐	Emissions reduction	☑	Behaviour change

Governments in the Global North and multilateral institutions should immediately cease all public support for fossil fuels globally (including the use of overseas aid budgets and export credits) and invest in renewable energy, especially where this gives energy access for the poorest.

In 2020 the UK Government announced that it would stop funding fossil fuel projects overseas.[117] But there were loopholes in this plan for projects already in the pipeline. For instance, Friends of the Earth England, Wales and Northern Ireland has been challenging UK funding for a massive gas development in Mozambique.[118]

The next step would be for the UK Government to use its banking regulation powers to require UK-based banks and financial institutions to phase out their investments in overseas fossil fuels.

For further information:
An Economy of Life: How transforming the economy can tackle inequalities, bring climate justice and build a sustainable future, Christian Aid 2019, https://www.christianaid.org.uk/sites/default/files/2022-08/an-economy-of-life-world-bank-imf-briefing-oct2019.pdf, Pp.3-5
Building back with justice - dismantling inequalities after Covid-19, Christian Aid, 2020, building-back-justice-covid19-report-jul2020_0.pdf (christianaid.org.uk) p.57

Join the Beyond Oil and Gas Alliance & support the fossil fuel phase out treaty

The Scottish government should join the Beyond Oil and Gas Alliance, and champion the call for a global Fossil Fuel Non-Proliferation Treaty.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

BOGA is an international alliance of governments and stakeholders working together to facilitate the managed phase-out of oil and gas production. The alliance aims to elevate the issue of oil and gas production phase-out in international climate dialogues, mobilise action and commitments, and create an international community of practice on this issue. The Scottish Government, having committed to ending 'maximising economic recovery' as a policy goal for fossil fuels, should show its climate leadership by joining BOGA.

The Paris Agreement does not mention fossil fuels and the COP27 outcome did not mention oil and gas. But in order to meet the goals of the Paris Agreement, international cooperation to explicitly stop the expansion of fossil fuels and manage a global Just Transition away from coal, oil and gas is needed. Just as the world has used treaties to defuse the threats posed by nuclear weapons, landmines and chlorofluorocarbons, today a Fossil Fuel Non-Proliferation Treaty (FFNPT) to address the threat posed by fossil fuel production is needed. There is a growing international campaign for a FFNPT, with support from a growing number of cities, states, sub states and countries. The Scottish Government could show global climate leadership by adding its voice and championing the Treaty.

[117] Christian Aid welcomes end to UK funding of overseas fossil fuels, 2020, https://mediacentre.christianaid.org.uk/christian-aid-welcomes-end-to-uk-funding-of-overseas-fossil-fuels/

[118] Friends of the Earth to appeal latest court ruling on UK financing for Mozambique gas project, FoE, 2023, https://friendsoftheearth.uk/climate/friends-earth-appeal-latest-court-ruling-uk-financing-mozambique-gas-project

This Treaty would potentially be a step change in global emissions reductions and climate justice.

In order to join either of these initiatives the Scottish Government would have to commit to aligned policies in relation to fossil fuels domestically.

For further information:
Beyond Oil and Gas Alliance home page, https://beyondoilandgasalliance.org
Fossil Fuel Non Proliferation Treaty homepage https://fossilfueltreaty.org/

5.2.2 Renewable Energy

Set a 100% renewable energy generation and use target

Set a revised and more ambitious target for renewable energy - overwhelmingly renewable by 2030 and 100% of energy used and generated in Scotland to be from renewables by 2035.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The current target is that renewables should provide 50% of all energy consumed by 2030, covering electricity, heat and transport. There is also a target for a 'largely decarbonised' electricity system by 2032. These targets were set when Scotland's climate targets were a 66% reduction by 2032, and only 80% by 2050, rather than the current 75% by 2030 and net zero by 2045.

The draft Energy Strategy includes two very different and incompatible ambitions for Scotland's future energy demand: at least the equivalent of 50% of energy use to come from renewables by 2030, and; energy use to be 'largely decarbonised' by 2030.

The Scottish Government's own analysis has shown that the latter ambition - which is necessary to meet our climate targets - is not possible through relying on Negative Emissions Technologies such as CCS and blue hydrogen. Such technologies are demonstrably incapable of contributing to emissions reductions over the next decade, and serve only to prolong the life of the fossil fuel industry and distract from the real solutions to the climate crisis.

SCCS' policy to phase out fossil fuels as quickly as possible means that in future energy use in Scotland will mostly be in the form of electricity plus some biomass. To deliver this policy, the additional gas fired power station proposed for Peterhead must be rejected.[119]

The energy target should be increased to 100% of energy generated and used in Scotland to be from renewable sources by 2035 at the latest, with energy overwhelmingly from renewables by 2030.

The nuclear reactors at Torness are due to shut down in 2028 at the latest. Just Transition plans for workers and communities currently reliant on the power stations at Torness and Peterhead are crucial to identify and support opportunities for retraining, investment and redeployment into jobs in the green economy, including in renewables and energy efficiency, making best use of the skills and experience of the workforce.

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[119] SSE have proposed to build an extra 910MW gas-fired power station to run alongside the existing plant which is already Scotland's most climate polluting site. SSE has conceded that *"should both of the plants operate simultaneously this will result in an emissions increase from approx. 1.29MtCO_2e to 1.54MtCO_2e. This would represent 10.7% of the Scottish Carbon Budget in 2034."* https://theferret.scot/new-peterhead-gas-plant-run-at-same-time-as-old/

Policies should be carefully designed to give extra support to groups who will find it harder to transition away from fossil fuels, including rural communities, farmers and the fishing industry.

For further information:
How much is 100%, FoE Scotland, 2010, https://foe.scot/how-much-is-100/
Scotland 'can easily' get to 100% renewables with flexibility, Finnish energy boss says, Energy Voice, 2019, https://www.energyvoice.com/renewables-energy-transition/202556/scotland-can-easily-get-to-100-renewables-with-flexibility-finnish-energy-boss-says/
100% Renewable UK home page, https://100percentrenewableuk.org/
See also the 'minimise demand for transition materials' policy in the Waste and Circular Economy chapter.

Ensure renewable energy is nature-positive

Commit to nature-positive renewable energy developments

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

More renewable energy is a vital part of the energy transition. There needs to be a planning system favourable to renewable energy, but there also need to be the right safeguards for nature built in.

Onshore and offshore wind developments can pose a major risk to our already under-pressure bird populations. An example would be the proposed Berwick Bank windfarm, at the mouths of the firths of Forth and Tay. This 300-turbine development, covering 1,000 square kilometres, is estimated – by SSE Renewables' own modelling – to kill hundreds of kittiwakes, gannets and guillemots each year.

Seabirds have suffered serious declines in recent decades due to industrial fishing taking their food, invasive species of mammals eating eggs and chicks, and non-native plant life restricting nesting sites. And over the past year there has been the devastation of bird flu.

Much more onshore and offshore wind is anticipated. It is vital that the race to net zero to tackle the climate crisis does not worsen the intertwined nature crisis.

Deployment of renewables should be planned in a strategic way, assessing the impacts on nature from the outset, rather than the current ad hoc approach. This strategic approach should include appropriate compensatory measures.

This policy ensures nature protection while also delivering green jobs and a Just Transition.

For further information:
Powering Healthy Seas: Accelerating Nature Positive Offshore Wind, RSPB, August 2022, https://www.rspb.org.uk/globalassets/downloads/pa-documents/powering-healthy-seas-report_rspb_august-2022.pdf

Set community renewables targets

Set targets of 2GW locally-owned renewable energy, of which at least 1GW is in full community ownership, by 2030, and extend targets beyond 2030.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Although the Scottish Government has provided strong and consistent support for local energy projects and achieved significant successes via the CARES scheme, the 2020 target for '1GW Community and Locally Owned Energy' was not met. This is partly due to factors outside of Scottish Government control, such as changes to the subsidy regime made by the UK Government. However, the failure to reach the 1GW target should trigger remedial action rather than any reduction in ambition.

Amending the target to '2GW locally-owned energy, of which at least 1GW is in full community ownership, by 2030' would further strengthen the commitment; recognising the unique value of community-owned energy. The current target groups community-owned energy projects alongside projects owned and developed by farms and estates. However, community-owned projects provide far broader societal benefits, and are subject to unique challenges not experienced by for-profit developments led by local landowners.

Local authorities should also be supported to take an active role in community renewables projects in their area, as with the Edinburgh Community Solar Co-operative.

Further policy support for community leadership on decarbonisation is vital if we are to get back on track after missing the 1GW by 2020 target. The Committee on Climate Change has estimated that 60% of all decarbonisation measures require behaviour change, and community leadership is recognised as key to achieving and sustaining such a change. As we move towards joined up local energy systems, community support programmes for specific sectors (e.g. electricity, waste, heat, transport) should increasingly also be joined up to create a clear cross-sector plan for community leadership in decarbonisation. Vital to the success of community renewables is ensuring that all voices are heard within community projects, including marginalised voices.

A joined-up community strategy should be underpinned by new cross-cutting policies to support community leadership, such as an obligation on all relevant statutory bodies to allocate a minimum of 10% of their spend on reducing emissions to grassroots, locally-based partners, thereby supporting the growth of local infrastructure and community-led solutions. After a trial period this percentage could be increased for bodies where the measure has proved effective, and reductions or exceptions made for other bodies where required.

For further information:
Consultation response to Draft Energy Strategy & Just Transition Plan, Community Energy Scotland, May 2023,
https://communityenergyscotland.org.uk/wp-content/uploads/2023/05/ESJTP-SG-Consultation-Response-CES-May2023.pdf

5.2.3 Negative Emissions Technology and Hydrogen

Don't rely on Negative Emissions Technologies for emissions reductions

Create a plan for emissions reductions that does not rely on Negative Emissions Technologies (NETs).

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities

☑	Emissions reduction	☐	Behaviour change

Most NETs rely on carbon capture and storage (CCS) and this is unproven at the scale needed and unlikely to be up and running in any significant capacity before the 2030s.

On Carbon Capture and Storage, a report for FoE Scotland in 2021 found:

- there were just 26 operational CCS plants in the world, with 81% of carbon captured to date used to extract more oil via the process of Enhanced Oil Recovery (EOR), and at this stage CCS planned deployment remains dominated by EOR.
- global operational CCS capacity was 39MtCO_2 per year, only about 0.1% of annual global emissions from fossil fuels.
- there was no operational CCS capacity in the UK yet the UK Committee on Climate Change projects CCS capacity of up to 176MtCO_2 by 2050. This would mean that the UK would need to create four times the entire current global CCS capacity

Scotland's 2019 Climate Change Act establishes in law the concept of a "fair and safe Scottish emissions budget." Extrapolating from remaining global carbon budgets for 1.5ºC and 2ºC, leading climate scientist Professor Kevin Anderson has stated that such a budget *"is inconsistent with any realistic interpretation of the roadmaps of CCS-based power generation."* For every megatonne of carbon released in the power sector, a megatonne of carbon cannot be released from another sector.

The Scottish Government's own progress monitoring[120] found that CCS would not be a commercial-scale reality until at least the 2030s.

The current Climate Change Plan envisioned CCS being available at scale from 2029. Both the Committee on Climate Change[121] and four Committees of the Scottish Parliament[122] called for a 'Plan B' when climate change plans were proposed with a large reliance on NETs towards the end of the plan period.

Since NETs are unlikely to make any meaningful contribution to emissions reductions during the plan period it is time that 'Plan B' became 'Plan A' - the Scottish Government must create a plan for meeting the 2030 target and beyond that does not rely on NETs.

For further information:
A Review of the Role of Fossil Fuel-Based Carbon Capture and Storage in the Energy System, Tyndall Centre for FoE Scotland, 2021,
https://foe.scot/resource/report-carbon-capture-storage-energy-role/

Reject fossil hydrogen

Reject any role for fossil hydrogen in the energy system.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

[120] Climate Change Plan Monitoring Reports, Scottish Government, 2022, https://www.gov.scot/binaries/content/documents/govscot/publications/progress-report/2022/05/climate-change-plan-monitoring-reports-2022/documents/climate-change-plan-monitoring-reports-2022/climate-change-plan-monitoring-reports-2022/govscot%3Adocument/climate-change-plan-monitoring-reports-2022.pdf

[121] Progress reducing emissions in Scotland – 2021 Report to Parliament, Climate Change Committee, 2021, https://www.theccc.org.uk/publication/progress-reducing-emissions-in-scotland-2021-report-to-parliament/

[122] Scottish Parliament Committees question ambition on draft climate change plans, Holyrood Magazine, 2017, https://www.holyrood.com/news/view,scottish-parliament-committees-question-ambition-of-draft-climate-change-plans_13228.htm

Scottish Government policy has become more focused on Green hydrogen (from renewables) but the fossil fuel industry is still promoting Blue Hydrogen - that generated from fossil fuels. Blue hydrogen requires carbon capture and storage to be available, which will not be until the 2030s, if at all.

A 2022 report for FoE Scotland found:

- 98% of global hydrogen production is from fossil fuels
- because making hydrogen uses plenty of energy:
    - electric heat pumps are 168-342% more efficient than hydrogen boilers
    - hydrogen boilers may be 53–68% more expensive than electric heat pumps
    - electric vehicles are more than twice as energy efficient as hydrogen fuel cell vehicles

A trial of (Green) hydrogen for home heating and cooking in Fife is running a year late and participants had to be offered £1000 free cash before enough would sign up.[123] Similar proposed trials in England are already controversial with residents.[124]

A review of recent studies concluded that hydrogen for heating homes was a non-starter on technical, cost and environmental grounds[125] and the UK Energy Minister recently said he thought hydrogen was *'unlikely to be the way forward'* for heating homes.[126]

The draft Scottish Energy Strategy[127] acknowledges that hydrogen is unlikely to be used for home heating in Scotland. For other uses the Strategy focuses on Green hydrogen production but leaves open the possibility of Blue hydrogen being created for use in industry or transport.

The failure of CCS to develop and the urgent need for a phase out of fossil fuels means that the Scottish Government must not support the development of hydrogen derived from fossil fuels.

The Scottish Government must prioritise electrification over hydrogen, particularly in heating and transport, and support the use of Green hydrogen only in sectors where direct electrification is not possible. More generally, energy strategy needs to be in the context of circular economy principles and be led by demand reduction measures.

For further information:
Hydrogen in Scotland's climate journey, FoE Scotland, 2022,
https://foe.scot/report-exposes-high-cost-low-efficiency-of-hydrogen/
Draft Energy Strategy and Just Transition Plan – Consultation Response, Unison Scotland, May 2023,
https://unison-scotland.org/draft-energy-strategy-and-just-transition-plan-consultation-response/

5.2.4 Nuclear power

[123] Fife hydrogen trial short on sign ups despite offering £1000 'bribes,' the Ferret, December 2022, https://theferret.scot/fife-hydrogen-trial-short-sign-up-offering-1k-bribe/

[124] For instance, 'Strong' support from residents 'critical' to fate of controversial hydrogen village trial, Cheshire Live, March 2023, https://www.cheshire-live.co.uk/news/chester-cheshire-news/strong-support-residents-critical-fate-26380292

[125] Is heating homes with hydrogen all but a pipe dream? An evidence review, Jan Rosenow, 2022, http://www.janrosenow.com/uploads/4/7/1/2/4712328/is_heating_homes_with_hydrogen_all_but_a_pipe_dream_final.pdf

[126] Hydrogen heating in homes 'unlikely to be the way forward': UK energy minister, Hydrogen Insight, January 2023, https://www.hydrogeninsight.com/policy/hydrogen-heating-in-homes-unlikely-to-be-the-way-forward-uk-energy-minister/2-1-1467365

[127] Draft Energy Strategy and Just Transition, Plan, Scottish Government, January 2023, https://www.gov.scot/publications/draft-energy-strategy-transition-plan/documents/

No new nuclear

Oppose any kind of new nuclear reactor development in Scotland and instead support energy efficiency and renewables.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

Issues related to the resources used for, and emissions generated by, the construction and operation, as well as the uncertainties and risks of waste disposal and decommissioning, mean that nuclear energy is not a 'low carbon' or sustainable solution to the climate crisis. Given the wealth of renewable resources available to Scotland, seeking to address energy issues with nuclear power would be both expensive and an unnecessary distraction from a transition to a genuinely clean energy system.

Germany recently completed its nuclear phase out, switching off its last three nuclear power stations. Increased energy efficiency and the rapid growth of renewable energy more than offsets the energy which was generated by these plants. France's ageing and ailing fleet of reactors are proving unreliable with more than 40% of them out of action in 2022. Two new reactors are still being built in France 11 years after they were supposed to be finished, while French energy company EdF is having to be fully nationalised, mainly because of its nuclear debts.[128]

The UK Government continues to support new nuclear power but the Hinkley Point C reactors are now expected to start operating ten years later than planned, with a price tag nearly double the original £18bn, and with electricity bill payers paying at least £30bn over the next 35 years. The UK's decades-long search for a store for the most radioactive waste continues without a result. The UK Government should abandon its plans for new reactors, and begin to phase out existing reactors, as has happened in Germany.[129]

The industry talks of newer, smaller designs but these will not produce cheaper electricity even if produced in large numbers, will not be available until well into the 2030s and will produce more radioactive waste for each unit of electricity generated than current designs.

The Scottish Government is implacably opposed to new reactors of traditional designs but must also firmly rule out any form of nuclear reactors in Scotland.

For further information:
Net Zero without nuclear - the case against nuclear power, Jonathon Porritt, 2021,
https://www.jonathonporritt.com/wp-content/uploads/2021/04/Net-Zero-Without-Nuclear-updated.docx.pdf

5.2.5 Public Energy Company

Set up a publicly owned energy company

The Scottish Government should set up a publicly-owned energy company with a broad remit, including generation, and support municipal energy generation projects, potentially combining both of these.

[128] France starts process to fully nationalise power group EDF, Reuters, 2022, https://www.reuters.com/business/energy/france-keeps-edf-buyout-offer-12-euros-per-share-filing-2022-10-04/

[129] Over and out: Germany switches off its last nuclear plants, AP, April 2023, https://apnews.com/article/germany-nuclear-power-plants-shut-energy-376dfaa223f88fedff138b9a63a6f0da

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

In the Energy Strategy consultation, the Scottish Government makes clear, reiterating again, that it will not be proceeding with a publicly-owned energy company, despite the fact this was once Scottish Government policy and Green Party policy, and the September 2021 SNP conference voted for it. It claims that a company involved in major energy generation would only be possible in an independent Scotland, but Wales is proceeding with an energy company[130] and the Labour Party is proposing to create GB Energy, which would supply 100% 'clean' power by 2030.[131]

The first Scottish Just Transition Commission called in March 2021 for the Scottish Government to deliver the public energy company they had promised "at pace" and with a broad remit.

The think tank Common Weal said that the failure to create a state-owned Scottish energy company that could have been involved in developing and deploying new offshore wind farms was *"arguably the greatest economic failure of the last decade."* The Herald reported in January 2022 that such a company could have sold the new ScotWind offshore electricity to the grid and retained the operating profits, with concerns that the failure would cost Scotland between £3.5 billion and £5.5 billion every year - about a tenth of the Scottish budget.[132]

Unions criticised the Scottish Government plan for being only a 'white label' supplier role. SCCS strongly supports a publicly-owned energy company which is involved in generation. SCCS agrees that a publicly-owned energy company, potentially working with local authorities on energy generation, has a key role to play including in how Scotland continues to tackle fuel poverty and the cost of living crisis, all interlinked with the climate crisis.

Beyond a single national company, new specialist publicly-owned energy companies with a remit to co-invest into and develop new clean energy generation, and grow shorter supply chains and industrial capacity should be central to Scotland's energy strategy. For larger scale projects, companies could initially begin life as a minority co-investor with private sector partners, to accumulate experience, skills and capacity. Offshore wind and tidal stream should be a priority for such investment.

The Scottish Government should also take ownership stakes in privately-owned ports and strategic maritime support infrastructure, where current owners are failing to upgrade or invest in line with the needs of the climate transition. By assessing existing ports and fabrication yards capable of renewable manufacturing, providing funding in return for an equity stake or bringing them into public control and providing guarantees of jobs in manufacturing, the Scottish Government will be able to ensure that communities with existing infrastructure will be able to take full advantage of the Just Transition.

Local authorities should be encouraged and supported to set up local and/or regional public energy companies, investing and building new renewable generation within and beyond their local geography.

This policy will create jobs, and help to tackle inequalities and support the Just Transition.

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[130] Wales to set up own public energy firm after Scots Gov blows plan, Herald, November 2022, https://www.heraldscotland.com/news/homenews/23152165.wales-set-public-energy-firm-scots-gov-blows-plan/ & Wales launches publicly owned energy company with focus on community renewables, Edie, August 2023, https://www.edie.net/wales-launches-publicly-owned-energy-company-with-focus-on-community-renewables/

[131] Labour's plan for GB Energy, Labour Party, 2023, https://labour.org.uk/issue/clean-energy-by-2030/ (Labour include nuclear power in their definition of 'clean' power).

[132] ScotWind: Scotland set to lose billions in windfarm profits, Herald, January 2022, https://www.heraldscotland.com/news/homenews/19868171.scotwind-scotland-set-lose-billions-windfarm-profits/

For further information:
A Scottish public energy company for generation. Video of presentation to Just Transition Partnership 'Reclaiming Our Energy' conference. Mika Minio-Paluello, Transition Economics, February 2023, https://www.youtube.com/watch?v=SjzEABDu-Yg&list=PLqk-4e9lz2yNKNNUg93YlozX5KvQ87UlD&index=6
Reclaiming Our Energy conference, Just Transition Partnership, 2023, https://www.jtp.scot/reclaiming-our-energy/
Action for Jobs: STUC, 2021, https://stuc.org.uk/files/Election21/Action_for_Jobs.pdf
STUC Response to the Economy, Energy and Tourism Committee call for views on a Publicly Owned Energy Company, 2018, https://www.parliament.scot/S5_EconomyJobsFairWork/Inquiries/EEFW-S5-18-POEC-17-STUC.pdf

5.2.6 Just Transition in Energy

Deliver a just Energy Transition

Ensure a Just Transition at pace, in line with the 1.5ºC Paris target, with no workers or communities left behind,

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

With the energy sector accounting for around three-quarters of greenhouse gas emissions globally, a fast and just global energy transition to clean and renewable sources of energy is vital to prevent ever more dangerous climate impacts and, as a relatively rich country and historically high emitter, Scotland has an obligation to move fastest.

Switching from polluting fossil fuels to clean and renewable energy sources, promoting more efficient energy and resource use, and reducing energy consumption, are all vital elements of this transition. However, without a focus on justice, the transition risks undermining human rights and entrenching existing and historic injustices and inequalities.

The Scottish Government's draft Energy Strategy and Just Transition Plan[133] sets out an investment plan of almost £5bn over this parliament. Other analyses suggest much larger figures, for example, Common Weal's estimate of £170bn for the energy transition.[134] Much larger flows of investment than the suggested £5bn, from both public and private sectors, will be needed over the next decade. The Scottish Government should include fiscal projections on the one hand and plans to both incentivise and require private investment in the enterprise-level investments needed to transform every sector to achieve emissions reductions targets.

A range of key Just Transition policies includes:

Just Transition Commission

- the current Scottish Just Transition Commission should be established on a long-term, statutory footing with a representative membership, drawing on the key stakeholders in a Just Transition i.e. affected workers and communities, trade unions and

[133] Draft Energy Strategy and Just Transition, Plan, Scottish Government, January 2023, https://www.gov.scot/publications/draft-energy-strategy-transition-plan/documents/

[134] Building a Green New Deal for Scotland, Common Weal, 2019, https://commonweal.scot/building-a-green-new-deal-for-scotland/

environmentalists, who can also consider gender, racial and disability justice as part of a Just Transition. It should continue to work for the duration of legally-binding emissions reductions targets, until the transition is complete.
- follow the Just Transition Commission's recommendations on immediate actions including a fossil fuel decommissioning programme and public investment in renewable manufacturing facilities
- implement the Just Transition Commission 2 reference to the importance of social infrastructure in investment in public services and their workforces [135]

Oil and gas production
- no new oil and gas licences and a managed wind down of production as soon as possible in line with a Just Transition, with timescales agreed with trade unions and communities

Maximising the benefits of renewable energy investments
- the Scottish Government should include conditionality in licensing rounds (administered by the Crown Estate and Crown Estate Scotland), to boost investment into domestic supply chains by making licences conditional on creation of local supply chain jobs
- ScotWind - work on ensuring lessons are learned from the ScotWind licensing round and there is more public control and accountability, as well as public investment
- share the benefits of our energy system fairly, through public and community ownership

Job creation and domestic manufacturing
- invest in domestic manufacturing and assembly for renewables and jobs in the circular economy including
    - improve baseline port infrastructure to be able to support growth of jobs in offshore wind construction and manufacturing
    - clarify that to achieve its existing core mission of supporting *"the Just Transition to net zero emissions by 2045"*, the Scottish National Investment Bank can use an active ownership approach towards companies in which it has invested, to encourage greater domestic procurement and more local supply chains
    - direct the Scottish National Investment Bank to build on its investment into the expansion of Aberdeen Harbour by investing into and taking equity stakes in more Scottish ports. These should prioritise brownfield sites and incorporate community demands for siting
    - expand the scale of the Scottish National Investment Bank, enabling it to make more and larger investments into transition infrastructure
    - reconvene the Scottish Steel Sector Roundtable and task them with urgently creating a sustainable steel strategy for Scotland. The strategy should be guided by principles of global and domestic Just Transition, prioritise retaining the materials and skills required for the energy transition in Scotland, and creating decent green jobs, and aim to secure the development of an Electric Arc Furnace in Scotland

- to boost domestic manufacturing and support existing oil and gas supply chains to retool, the Scottish Government should:
    - use the Scottish National Investment Bank to build on UK investment schemes supporting offshore wind manufacturing and retooling, with additional Scottish support schemes

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[135] "Scotland's social infrastructure primarily includes the care, health and education services that underpin economic performance and sustain the entire workforce. These will be critical for delivery of the Scottish Government's Just Transition Outcomes across the board, and most obviously on adaptation and resilience. Achieving the transformation in a just manner requires that we significantly expand the number of jobs, skills and pay in the low-emitting social infrastructure sector." https://www.gov.scot/binaries/content/documents/govscot/publications/independent-report/2022/07/making-future-initial-report-2nd-transition-commission/documents/making-future-initial-report-2nd-transition-commission/making-future-initial-report-2nd-transition-commission/govscot%3Adocument/making-future-initial-report-2nd-transition-commission.pdf and https://www.adaptationscotland.org.uk/how-adapt/tools-and-resources/climate-risks-workplace-protecting-workers-changing-climate

    - create public stakes in manufacturing (i.e. rather than providing grants to businesses, invest and take equity stakes in manufacturing sites). Maintaining active equity stakes can ensure that job quality remains high and procurement is supporting further local content from supplier industries

- the Scottish Government should support the creation of clear accessible pathways out of high carbon jobs, and a training regime for safety not profit, including
    - a Climate Emergency Skills Action Plan: rapid growth of the workforce should be anticipated with plans for new recruitment into the relevant sectors among young people entering the labour market and new skills for unemployed workers. Training and skills, inclusive labour market programmes and career development support should be delivered as part of this, including increasing access to the labour market for women, disabled people and people from ethnic minority communities
    - conduct and regularly update analysis, through Skills Development Scotland (SDS), forecasting long-term trends in skills demand in the context of the climate transition
    - review and expand funding available to FE colleges to develop courses covering emerging skills gaps and shortages for the climate transition in line with this long-term assessment
    - launch a targeted retraining funding initiative for oil and gas workers, available to all workers regardless of their employment status, with fast-track support available to those under threat of redundancy. Employers who want to participate should be required to demonstrate that they are supporting jobs with pay and conditions in line with national collective agreements (or Fair Work where those agreements don't exist). Courses and qualifications should include Recognition of Prior Learning processes
    - through the Green Jobs Workforce Academy or SDS, provide tailored advice to oil and gas workers that takes into account their experience without 'going back to the start'
    - Green public works programmes: supplement the UK Kickstart and Scottish Youth Guarantee schemes with Green Public Works Programmes which apply Fair Work principles from the start. These should be nationally funded but local-authority led and involve building new, green infrastructure and directly supporting jobs for long-term unemployed and young people, paid at union-negotiated rates. Trial and institute a paid time-off-to-train support scheme specifically for fossil fuel workers, or more broadly for workers in sectors shrinking due to major technological change
    - use its role on the Energy Skills Alliance to steer the offshore passporting scheme to a model which:
        - eliminates duplication of qualifications, ensuring that certification (including 'micro-certification') with one body is fully recognised by the other(s) and no duplication of training or assessment is needed including recognition of prior certificated learning
        - provides proportionate, efficient and robust individual assessment and recognition of competence for experienced workers so that they do not have to attend training in areas where they are already proficient but lack certification (recognition of prior experiential learning)
        - guarantees that training is up-to-date, while ensuring that no worker has to redo a course that is still in date
        - is digital, so that the training and certification record of workers can easily be checked
        - is accepted as the minimum standard required by industry operators
        - offer offshore workers in Scotland training support to meet the requirements of the Offshore Passport if needed for transitioning from oil and gas to other offshore industries (or prior to its setup, to meet existing training requirements for oil and gas workers seeking to work in renewables). This would form part of its commitment to a Skills Guarantee

to workers in carbon-intensive industries. Funding should be open to self-employed and off-payroll workers and cover wages lost as well as training costs. This should be part-funded by the new transition skills levy
    - establish a programme under the Green Jobs Workforce Academy to support individual workers to access training pathways that suit them, alongside a programme to support workers from under-represented groups or backgrounds to access opportunities within the offshore energy sector
    - support Scottish Further Education colleges in receiving industry body accreditation for delivering Offshore Training Passport aligned courses and carrying out recognition of prior experiential learning assessments

- make a strong recommendation to employers to grant facility time to workplace green reps, in the way that health and safety reps have statutory facility time. This would assist not just with green workplace action on emissions reduction, but also on crucial adaptation work, as identified in the new resources for trade unionists produced in a joint project with the STUC, Adaptation Scotland and UNISON
- ensure safety, job security and fair pay across the energy industry

Wind turbine decommissioning and repowering

- planning for wind turbine decommissioning and repowering should start now, and be included in the Energy Strategy. As with all such plans, engagement with key stakeholders including workers and Trade Union representatives, affected communities and environmental stakeholders, is key
- the practicalities of using an Extended Producer Responsibility (EPR) scheme for wind turbines should also be considered as a way of ensuring developers take on the responsibility and financial costs of decommissioning. EPRs encourage more sustainable use of materials as moving the cost to producers incentives them to reduce and recycle materials
- the UK Government's main mechanism for supporting low-carbon electricity generation, known as the Contracts for Difference (CfD) scheme, currently only considers the cost of projects. This could be amended so that CfD (or its successor) also includes an assessment of whole life carbon impacts as well. While this is a reserved matter, the Scottish Government is well placed to influence the design of CfD, given the importance of Scottish projects to the overall UK renewables sector

Communities have a strong role in achieving the Just Transition with their ability to a) reach out to the most vulnerable in society and b) to understand local challenges and develop the most appropriate solutions for their local communities. This is particularly true for ethnic minority communities in Scotland, especially in faith settings.

This policy would create jobs and contribute to progress on climate justice, gender justice, racial justice, tackling inequalities and improved health, and create social infrastructure to benefit all.

For further information:
Just Transition: government must act on decarbonisation recommendations, STUC, 2022, https://stuc.org.uk/media-centre/news/1660/just-transition-government-must-act-on-decarbonisation-recommendations
Towards a Just Energy Transition, Oxfam, 2022, https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621455/rr-just-energy-transition-071222-en.pdf;jsessionid=CE58069D1B32DC33860BD1DBD8233F8B?sequence=11
FoE briefing on the Energy Strategy and Just Transition Plan, 2023, https://foe.scot/resource/esjtp-briefings/
Our Power, Platform & FoES, 2023, https://foe.scot/wp-content/uploads/2023/03/Our-Power-Report.pdf
Action to turn Just Transition rhetoric into reality, Just Transition Partnership, 2021, https://www.jtp.scot/wp/wp-content/uploads/2021/09/JTP-Manifesto-2021-final.pdf

See also the policy on ‘An end date for fossil fuel production’ earlier in this chapter and the ‘Develop a Scottish steel strategy’ in the Business and Industry chapter.

Deliver a feminist Just Transition

Ensure the transition is feminist by reorienting the economy to tackle climate change while investing in social infrastructure - embedding care in the Net Zero Industrial Strategy, including incorporating a gendered analysis into the plans for transition to net zero.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

A Feminist Just Transition amplifies how the climate crisis is not equally felt, nor equally produced. Any response, mitigation or adaptation approach must recognise demographic intersections and how approaches can either entrench or remedy existing inequities, for instance, women and girls are disproportionately impacted by poverty worldwide, which reduces resilience to climate change. The current prioritisation on physical infrastructure transitions (e.g., Green New Jobs) in their current conceptualisation is likely to replicate existing social inequities, with women losing out due to already being under-represented in carbon-intensive industries.

The climate and inequality crises have the same root: an economic system that carelessly exploits for profit the earth’s resources and its people, especially women and marginalised groups. The system relies on care work (paid and unpaid) to produce, feed, clothe and look after a working population and keep economies running. Care work is often invisible, almost always undervalued and disproportionately performed by women. The same logic that sees this work as inexhaustible and a ‘natural’ function of being a woman, sees the earth itself as an infinite source of material, energy, food and water for consumption and profit, rather than a delicately balanced system that sustains all life. So, rewiring our economic system to care for people and planet is crucial.

There is a need to shift understanding of a Just Transition from simply reskilling existing workers to carbon neutrality to critically evaluating what is considered work, who it is performed by and how it is valued overall.

There is much to be done to transition to a low-carbon economy and an intersectional gendered analysis is a vital part of the planning process. This process should start in the policy development phase and be used as more detailed projects are developed. This analysis should also be built into monitoring and evaluation of policy outcomes to ensure that any negative unintended consequences can be mitigated.

Unless investment in much needed infrastructure change within housing, transport and construction is based on gender analysis throughout the policy planning process it will widen existing labour market gender inequality and deepen existing gendered occupational segregation. This analysis will enable policy makers to maximise the opportunities for poverty reduction that the transition presents and also ensure that inequalities are not entrenched through measures to transition the economy.

In light of the deepening climate and environmental emergency, and the need for an economy rooted in care for society and the planet, care can and should be regarded as an integral infrastructure. To do so, care should be embedded as a central component in the upcoming Net Zero Industrial Strategy to scale well paid, secure green jobs throughout Scotland’s economy, and rapidly and justly steward the economy towards sustainability to ensure it is fit for the future.

This policy creates jobs, contributes to gender justice and climate justice, and should be intersectional in nature.

For further information:
A green and caring economy, UK Women's Budget Group, 2022, https://wbg.org.uk/wp-content/uploads/2022/11/A-Green-and-Caring-Economy-Report-FINAL.pdf
Feminist Green New Deal, UK Women's Budget Group, 2020, https://wbg.org.uk/wp-content/uploads/2020/05/Feminist-Green-New-Deal.pdf
Challenges for 2021 and beyond, Scottish Women's Budget Group, 2020, https://www.swbg.org.uk/content/publications/SWBG-Challenges-for-2021-and-Beyond.pdf
Forthcoming paper on feminist Just Transition, Scottish Women's Budget Group

5.2.7 Energy Charter Treaty

Exit the Energy Charter Treaty

The UK government should exit the Energy Charter Treaty, and the Scottish government should call on them to do so.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The Energy Charter Treaty (ECT) is an investment agreement between 50 countries specifically for the energy sector. At the core of the ECT is the contentious investor state dispute settlement (ISDS) mechanism. This allows foreign companies to sue governments outside of the national legal system in secretive tribunals. ISDS in the ECT is being used by fossil fuel companies to sue governments for actions they take to address the climate emergency, such as phasing out coal-fired power stations, and banning fracking and oil drilling. The amounts at stake can be in the billions. The ECT has already generated at least 135 claims, making it the world's most litigated ISDS agreement. The ECT is opposed by a wide range of civil society groups.[136]

After the departure of a number of its member states from the Treaty, the EU is thought to be planning an exit as a bloc from the Energy Charter Treaty.[137]

This policy is very relevant for the Scottish Government as their climate policies are at threat through the UK being a party to the Treaty, and by coming out and publicly saying that the UK should leave the ECT they would be putting pressure on the UK government to do so.

Leaving the ECT would take away a major threat to governments' climate policies and actions.

For further information:
The Energy Charter Treaty - an unsustainable risk, Global Justice Now, February 2023, https://www.globaljustice.org.uk/wp-content/uploads/2023/02/ECT-parliamentary-briefing_Feb-2023.pdf

[136] For instance, Civil Society Organisations' Statement against the Energy Charter Treaty, European Environmental Bureau, 2021, https://eeb.org/wp-content/uploads/2021/07/CSO-Statement-ECT_July-2021.pdf

[137] EU to propose exit from Energy Charter Treaty over climate concerns, Reuters, June 2023, https://www.reuters.com/sustainability/climate-energy/eu-propose-exit-energy-charter-treaty-over-climate-concerns-2023-06-29/

6. Buildings

Emissions from the Buildings Sector cover emissions from fuel combustion for heating and cooling and garden machinery, and, perhaps unexpectedly, fluorinated gases released from aerosols and metered dose inhalers. Emissions fell 21% between 1990 and 2021.

Improving the energy efficiency of buildings reduces carbon emissions, cuts household bills and makes homes healthier. The top priority in reducing emissions from buildings is to improve the efficiency of each building, the next priority is to change heating systems over to zero-carbon technologies. The Bute House Agreement[138] between the Scottish Greens and the SNP committed to the majority of homes achieving an energy efficiency of EPC C or better by 2030, and all homes reaching this level by 2033.

Energy Action Scotland state that a quarter of households in Scotland are in fuel poverty.[139] A recent AgeUK survey of older people in Scotland found that 76% were always concerned about paying their electricity bill, only 46% felt they could heat their home to a comfortable level and four in ten identified themselves as living in fuel poverty.[140]

The Scottish Government is committed to spend £1.8bn over this Parliament on its current programme of work in the area of energy efficiency improvements to homes and the installation of zero-carbon heating systems. The Heat in Buildings Strategy[141] requires over a million homes and the equivalent of 50,000 non-domestic buildings to be using zero-emissions heat by 2030.

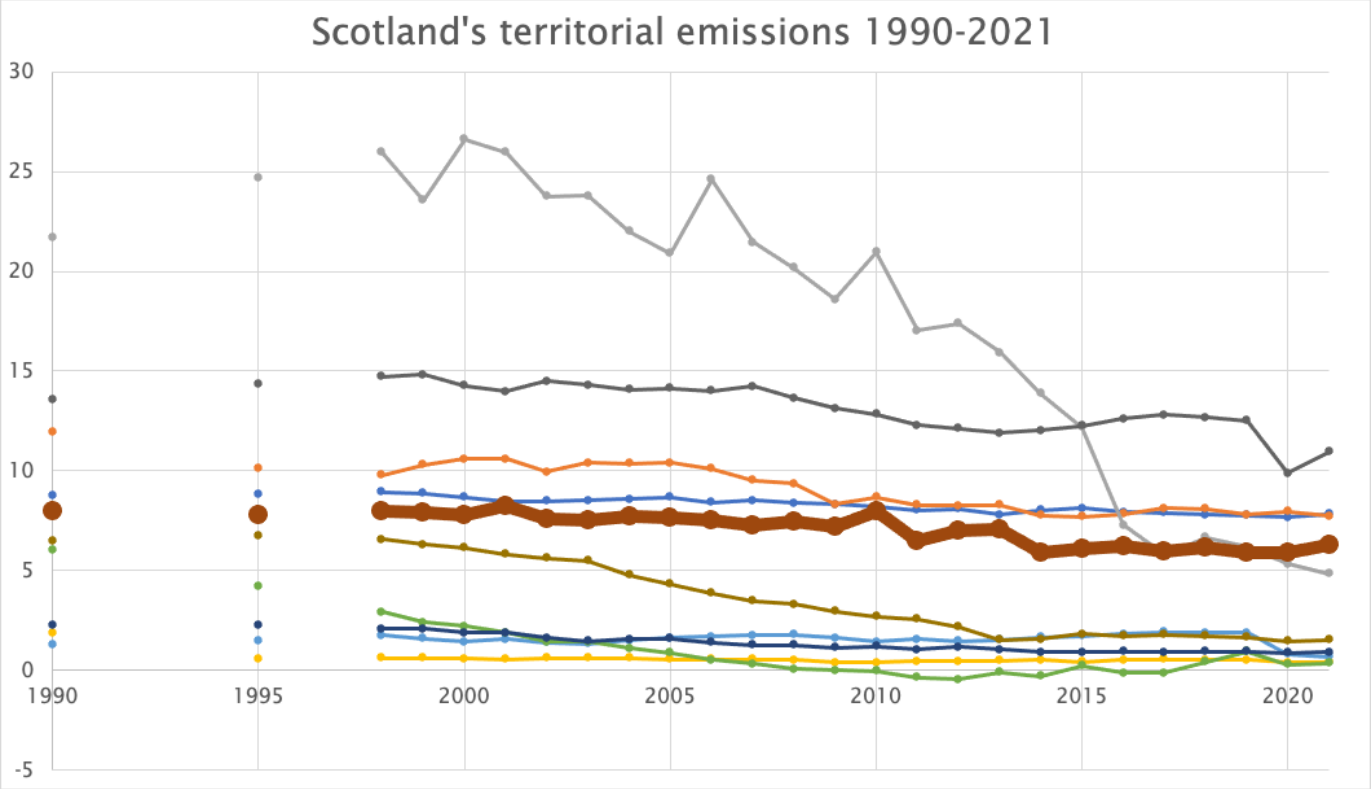

Figure 9: emissions in $MtCO_2e$ from the residential sector 1990-2021, showing a fall of 21% (brown line).

[138] Scottish Government and Scottish Green Party: draft shared policy programme, Scottish Government, 2021, https://www.gov.scot/publications/scottish-government-and-scottish-green-party-shared-policy-programme/

[139] https://eas.org.uk/key-issues/fuel-poverty-overview/

[140] Taking the Temperature, AgeUK, 2022, https://www.ageuk.org.uk/scotland/our-impact/policy-research-influencing/reports-research/taking-the-temperature/

[141] Heat in buildings strategy – achieving net zero emissions in Scotland's buildings, Scottish Government, 2021, https://www.gov.scot/publications/heat-buildings-strategy-achieving-net-zero-emissions-scotlands-buildings/

The measures in the current strategy include heat pumps, connection to heat networks, electric storage heaters and hydrogen heating systems.

In the longer term, the Scottish Government estimates that the total gross cost to deliver zero emissions for all buildings (including heating systems) by 2045 is £33bn, although householders would have spent about £5bn replacing heating systems in this time anyway.[142]

The decarbonisation of public sector buildings is essential. Hospitals, schools and colleges, care homes services, local government buildings, leisure centres, police stations and courts, social and community housing, water, transport and environment services will all need to decarbonise. This needs government action plans with major investment, and procurement and commissioning mechanisms to enable public services to meet their statutory binding obligations.[143] See 'Decarbonising the public sector' policy in the Public Sector chapter.

Reducing fuel poverty reduces costs on the NHS, with one recent estimate[144] suggesting that every £1 spent on warming up the homes of vulnerable households yields £4 in health benefits.

Four policies below set out the kind of regulatory measures, financial support, enabling actions and delivery plans that will be needed to decarbonise Scotland's homes.

6.1 Current climate plan

The Climate Change Plan update[145] lists 4 outcomes for buildings, with policies and proposed policies which are supposed to achieve them:

Outcome 1: The heat supply to our homes and non-domestic buildings is very substantially decarbonised, with high penetration rates of renewable and zero emissions heating
Outcome 2: Our homes and buildings are highly energy efficient, with all buildings upgraded where it is appropriate to do so, and new buildings achieving ultra-high levels of fabric efficiency
Outcome 3: Our gas network supplies an increasing proportion of green gas (hydrogen and biomethane) and is made ready for a fully decarbonised gas future
Outcome 4: The heat transition is fair, leaving no-one behind and stimulates employment opportunities as part of the green recovery

The Scottish Government's plan is to reduce emissions from buildings by 68% between 2020 and 2029, but with no further reductions after that.

[142] Heat in buildings strategy – achieving net zero emissions in Scotland's buildings, Scottish Government, 2021, https://www.gov.scot/publications/heat-buildings-strategy-achieving-net-zero-emissions-scotlands-buildings/

[143] Getting to net zero in UK public services: The road to decarbonisation, UNISON, 2021, https://unison-scotland.org/wp-content/uploads/Getting-to-net-zero-in-UK-public-services.pdf

[144] Tackling cold homes would save the NHS £540mn per year, new BRE research reveals, BRE Group, March 2023, https://bregroup.com/press-releases/tackling-cold-homes-would-save-the-nhs-540mn-per-year-new-bre-research-reveals/

[145] Climate change plan update, 2020, https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2020/12/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/documents/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/govscot%3Adocument/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero.pdf p 221 et seq

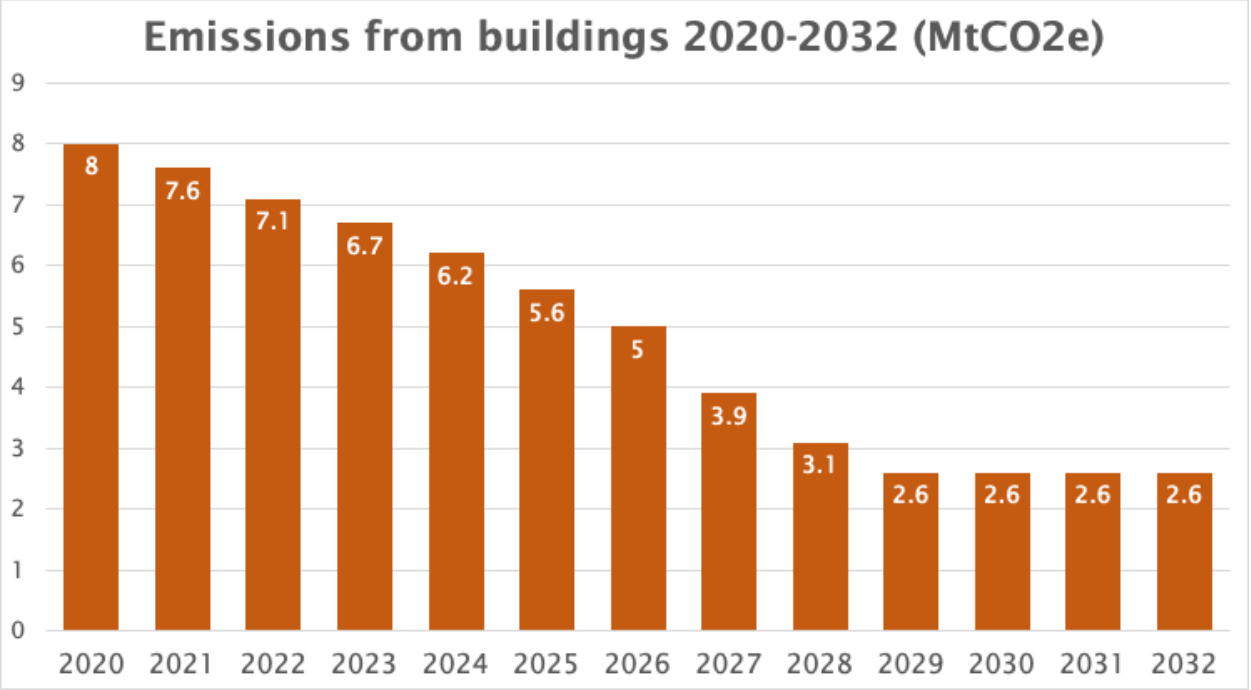

Figure 10: expected climate change emissions from buildings 2020-2023

6.2 Policies

Decarbonising homes and non-domestic buildings - regulations

Decarbonise Scotland's homes through a strong regulatory framework including mandatory standards.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Heating homes accounts for 15% of Scotland's annual greenhouse gas (GHG) emissions. It is the single largest source of emissions from heat, which itself accounts for half of Scotland's energy use and a third of all Scotland's GHGs.

The Heat in Buildings Strategy has set a target of over 1 million homes heated with zero emissions heat by 2030. It is clear the voluntary approach will not drive the pace and scale necessary to meet this target.

Decarbonising homes will require improvements to energy efficiency and the swapping of fossil-fuelled boilers for either individual electric heat pumps with new larger radiators or district/communal heating, depending on property type and location. There has been too little investment in these solutions, with emissions from existing homes falling only 2% in the last five years.

The Scottish Government has previously committed to setting minimum standards of energy efficiency for all homes (e.g. applied at point of sale or change of tenancy) and the phasing out of fossil fuel boilers. These measures are part of the Bute House agreement between the Scottish Green Party and the SNP.

Regulations are the best way to secure private investment that is crucial to meeting the considerable capital cost of decarbonising homes. Public funding will still be required, however, to help households afford the changes and ensure a Just Transition. Therefore the need is for a framework of regulations to drive investment coupled with an increase in Scottish

Government funding to support fuel poor households with fully funded installations and partial grant support to others. Further benefits, including decent local jobs, would accrue if this work was done through municipal energy companies.[146]

The regulatory framework should include:

- an 'efficient and renewables heat ready' energy efficiency standard for existing homes and non-domestic buildings, including a minimum energy efficiency standard, with all homes required to meet this standard by 2030
- zero-emissions heat regulations for homes and non-domestic buildings, requiring the replacement of oil and gas boilers to start from 2025
- a phased approach for flats and tenements
- changes to the fabric of individual buildings and housing estates to promote sustainable travel by residents - bike storage, car club provision, less or no space for garaging, etc

By confirming proposed regulatory standards, the Scottish Government will provide foresight to supply chains, enabling them to scale up. There are huge opportunities to create good jobs right across Scotland, supporting the Just Transition.

Action on energy efficiency would tackle fuel poverty, reduce health impacts (and cost to the NHS) of living in cold homes, reduce demand on networks at peak times therefore reducing infrastructure requirements (and cost and wider environmental impacts).

For further information:
Affordable Warmth - next steps for clean heat in scotland, WWF Scotland, February 2023, p45, https://www.wwf.org.uk/sites/default/files/2023-02/WWF-Affordable-Warmth-Scotland.pdf
Affordable Warmth Report: Policy Annex,WWF Scotland, February 2023, p5, https://www.wwf.org.uk/sites/default/files/2023-02/affordable-warmth-report-policy-annex.pdf
Existing Homes Alliance home page, https://existinghomesalliancescotland.co.uk/
Our Climate: Our Homes, STUC, 2021, https://stuc.org.uk/files/campaigns/Homes/Our-Homes_briefing.pdf
The fastest and simplest way out of the energy crisis: Zero emissions homes and the critical role of standards in the owner- occupied sector, Existing Homes Alliance, January 2023, https://existinghomesalliancescotland.co.uk/wp-content/uploads/2023/04/EHA-Briefing-Role-of-Regulation-short-version-Feb23-Final.pdf
Rural Homes Just Transition Package, Existing Homes Alliance, 2022, https://existinghomesalliancescotland.co.uk/wp-content/uploads/2022/10/Rural-Homes-Just-Transition-Package.pdf

Decarbonise homes and non-domestic buildings through strong financial support

Decarbonise Scotland's homes and non-domestic buildings through strong financial support.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

In the current cost of living crisis, tackling the problems of inefficient and poor quality housing is especially urgent but policies must ensure that the cost of upgrades and retrofits must not fall on tenants. In particular policies must address the issue of exploitative landlords. Living Rent are right to say[147] that the costs of upgrades and retrofits must not fall on tenants, nor

[146] Our Climate: Our Home, STUC, 2022, https://stuc.org.uk/files/campaigns/Homes/Our-Homes_briefing.pdf
[147] Living Rent Climate Change Statements, Living Rent, 2022, https://www.livingrent.org/living_rent_statement_on_climate_change

should they be evicted following rising rents. Tenants must be fully consulted and approve of any changes to their homes and lived environments.

Women and marginalised groups are often priced out of buying or renting good quality housing[148], and lack of accessibility means that disabled people face a limited choice of properties. Key issues coming from a forthcoming SWBG Women's survey speak further to this point about the poor housing conditions women are facing and the challenges that their current home circumstances (i.e. renting) present for carrying out climate-friendly improvements to the home.

Some disabled people need to keep their homes warmer than normal, and equipment such as power chairs or oxygen machines can increase electricity consumption considerably. Financial support mechanisms should be designed with these additional needs in mind.

Delivering on ambitious plans for decarbonising homes and other buildings requires financial support including:

- fuel poverty support
- householder/building owner grants and loans
- other private sector financing mechanisms to reduce upfront costs
- action to tackle the unfair imbalance between gas and electricity pricing to reduce running costs and make electric heating the more cost effective option

Investing in decarbonising homes is a win-win for tackling energy efficiency, warmer homes, improved health, reduced fuel poverty, addressing gender inequality and assisting families in the cost of living crisis. And also creating local jobs.

Action on low-carbon heat improves energy security (domestic renewables instead of imported gas), creates additional economic activity through installation and manufacture (e.g. the heat pump factory in Livingston), and removes fossil price instability as a driver of fuel poverty.

For further information:
Affordable Warmth - next steps for clean heat in scotland, WWF Scotland, February 2023, p45, https://www.wwf.org.uk/sites/default/files/2023-02/WWF-Affordable-Warmth-Scotland.pdf
Affordable Warmth Report: Policy Annex,WWF Scotland, February 2023, p5, https://www.wwf.org.uk/sites/default/files/2023-02/affordable-warmth-report-policy-annex.pdf
Existing Homes Alliance home page, https://existinghomesalliancescotland.co.uk/
Our Climate: Our Homes, STUC, 2021, https://stuc.org.uk/files/campaigns/Homes/Our-Homes_briefing.pdf
Rural Homes Just Transition Package, Existing Homes Alliance, 2022, https://existinghomesalliancescotland.co.uk/wp-content/uploads/2022/10/Rural-Homes-Just-Transition-Package.pdf

Decarbonising homes and non-domestic buildings through enabling actions and delivery

Deliver decarbonised homes and non-domestic buildings through clearly-communicated enabling actions and delivery.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

[148] https://wbg.org.uk/wp-content/uploads/2019/07/WBG19-Housing-Report-full-digital.pdf

Building owners, homeowners and landlords need to know exactly what improvements they will need to make to their homes and by when. Early signalling of regulations and standards will also provide certainty to the supply chain, enabling businesses to invest in expansion.

Key building blocks for successful customer journeys should include:

- effective awareness raising
- one-stop shop approach
- easy access to advice and support via digital platforms and in person
- a range of financial support mechanisms
- building renovation passports
- access to project management/coordination services
- community-based services
- facilitation of demand aggregation
- post-installation support
- easy access to redress

This is particularly urgent for people living in remote, rural and island communities who are going to be at the forefront of the transition to zero emissions homes. The Scottish Government should introduce a package of measures to support people living in rural and island areas to insulate their homes and install zero emissions heating in a way that is fair, affordable and accessible to rural households.

A key focus is about the speed and focus of delivery, especially working in a way that targets those most in need first (in both private and social rented sector) and, that while the workforce to deliver retrofitting is scaled up, measures are brought in to eliminate inequalities in the sector.

Another urgent need is to identify and address constraints to the grid that will delay the electrification of heat. This will require engagement with multiple stakeholders and the clear and fair allocation of costs associated with increasing grid capacity.

Clearly communicating the changes that are coming will help to get householders and building managers on board, and smooth the transition to zero-emissions buildings. It will help to realise the transition's multiple benefits for the environment, for human health and for the economy.

For further information:
Customer Journeys to Net Zero Homes, Existing Homes Alliance, January 2023, https://existinghomesalliancescotland.co.uk/wp-content/uploads/2023/01/Customer-Journef
Affordable Warmth - next steps for clean heat in scotland, WWF Scotland, February 2023, p45, https://www.wwf.org.uk/sites/default/files/2023-02/WWF-Affordable-Warmth-Scotland.pdf
Existing Homes Alliance home page, https://existinghomesalliancescotland.co.uk/
Our Climate: Our Homes, STUC, 2021, https://stuc.org.uk/files/campaigns/Homes/Our-Homes_briefing.pdf
Rural Homes Just Transition Package, Existing Homes Alliance, 2022, https://existinghomesalliancescotland.co.uk/wp-content/uploads/2022/10/Rural-Homes-Just-Transition-Package.pdf

Use geopolymer cement

Use policy to drive the adoption and use of low-carbon Geopolymer cement.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The cement industry is one of the world's largest industrial emitters of climate emissions, responsible for about 8% of CO2 emissions[149]. Geopolymer cement has a significantly lower carbon footprint than traditional cement.

Geopolymer technology already exists and raw materials are readily available. Actions which would increase the take up of Geopolymer cement include:

- procurement can foster the demand for the development of the product. It should look at performance based outcomes and whole-life costing not just what is the initial cost. Telling the market exactly what product you want allows development and innovation to come up and the market to provide the solutions
- adopt performance-based specifications. The existing British Standard for cement is based on the fraction of Portland cement, rather than an actual measure of strength. The main reason why Australia is so far ahead with the adoption and use of geopolymer is that they have performance-based standards for concrete which focus on strength and flexibility. The Australian standards allow for the use of non-cementitious materials for the production of concrete. For example, according to Australian specifications materials should be: environmentally sustainable, follow circular economy principles, have extended life over traditional materials, be fully recyclable and reduce the maintenance costs
- promote demand-side adoption rapidly through the specification processes. Consider how to influence specifiers. This could be achieved through demonstrators and through making geopolymer and other low carbon technologies more widely known about
- engage the government in procurement. For example, the Government in Australia accounts for 30% of demand. So, if the government demands geopolymer bridges, pipes, etc, then the industry will follow
- establish knowledge transfer with other countries that are more advanced in the production and application of geopolymer such as Australia. This will make it easier for Scotland to take the first steps
- share positive and encouraging stories about geopolymer such as the fact that geopolymer concrete costs exactly the same as conventional concrete in Australia. Another convincing example is that a whole bridge was made of geopolymer in Australia
- set up geopolymer demonstrators to prove the technology and attract investment

Based on these recommendations, the Scottish Government should develop a strategy to increase the use of geopolymer cements in Scotland.

For further information:
Climate Emergency Summit - Geopolymer Cement, RSGS, 2020,
https://www.rsgs.org/Handlers/Download.ashx?IDMF=588ab361-754f-4fba-92d9-e994ef23eaaa
Unearthing injustice - a global approach to transition minerals, FoE Scotland, May 2023,
https://foe.scot/wp-content/uploads/2023/05/Unearthing-Injustice.pdf

7 .Transport

Emissions from the Transport sector cover emissions from domestic aviation, road transport, railways, domestic navigation, fishing and aircraft support vehicles, and international aviation and shipping. Emissions fell 26% between 1990 and 2021, with a significant dip during the COVID-19 pandemic.

149
https://www.theguardian.com/business/2021/oct/12/cement-makers-across-world-pledge-large-cut-in-emissions-by-2030-co2-net-zero-2050

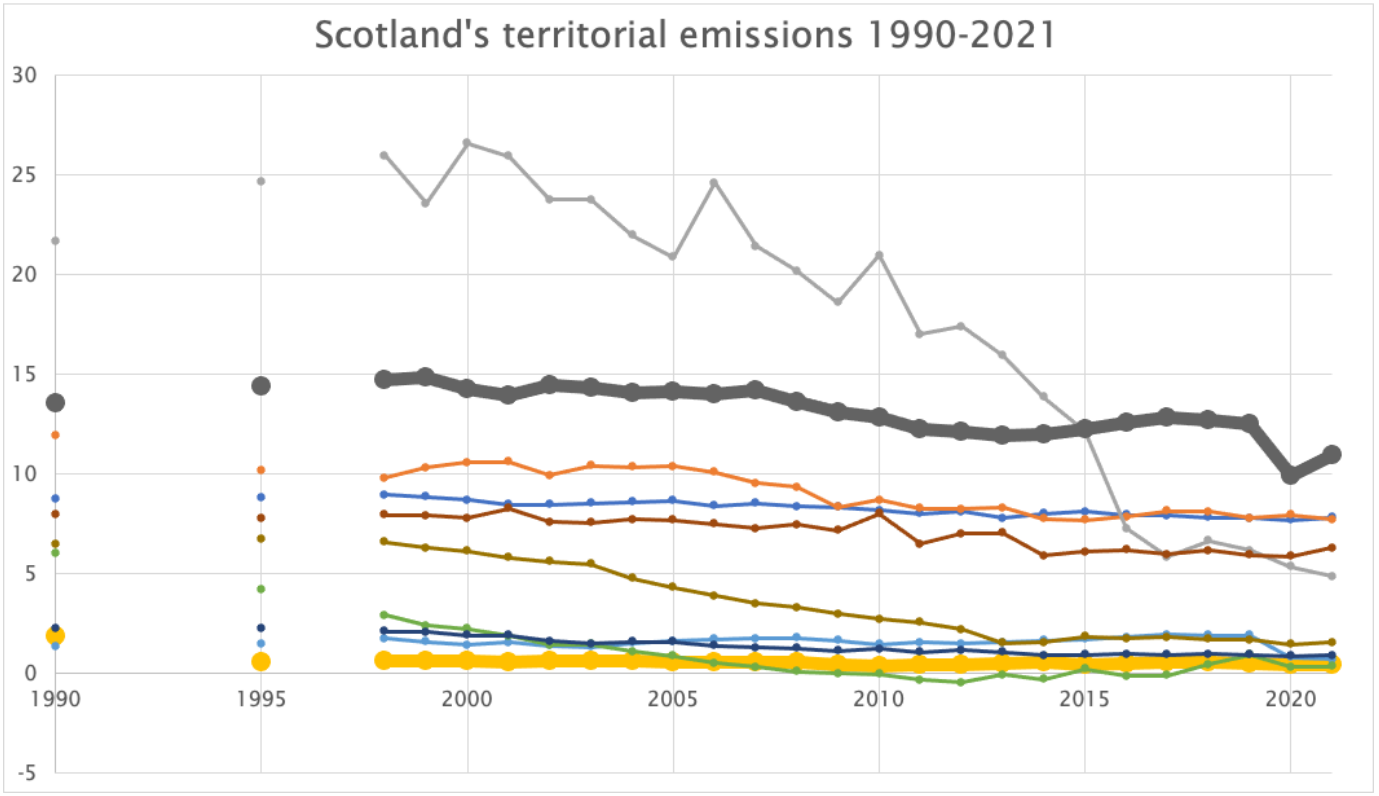

Figure 11: emissions in $MtCO_2e$ from domestic transport (grey line) and international aviation and shipping (yellow line) 1990-2021, showing a combined fall of 26%.

Our current transport system imposes a range of external costs on society: environmental - climate change, air and noise pollution, damage to wildlife; social - community severance, poor health due to physical inactivity, illness and injury, serious injury and death due to road traffic accidents, and economic - congestion, road repair costs and health costs. These impacts are not felt equally, with the poorest communities experiencing them worst.

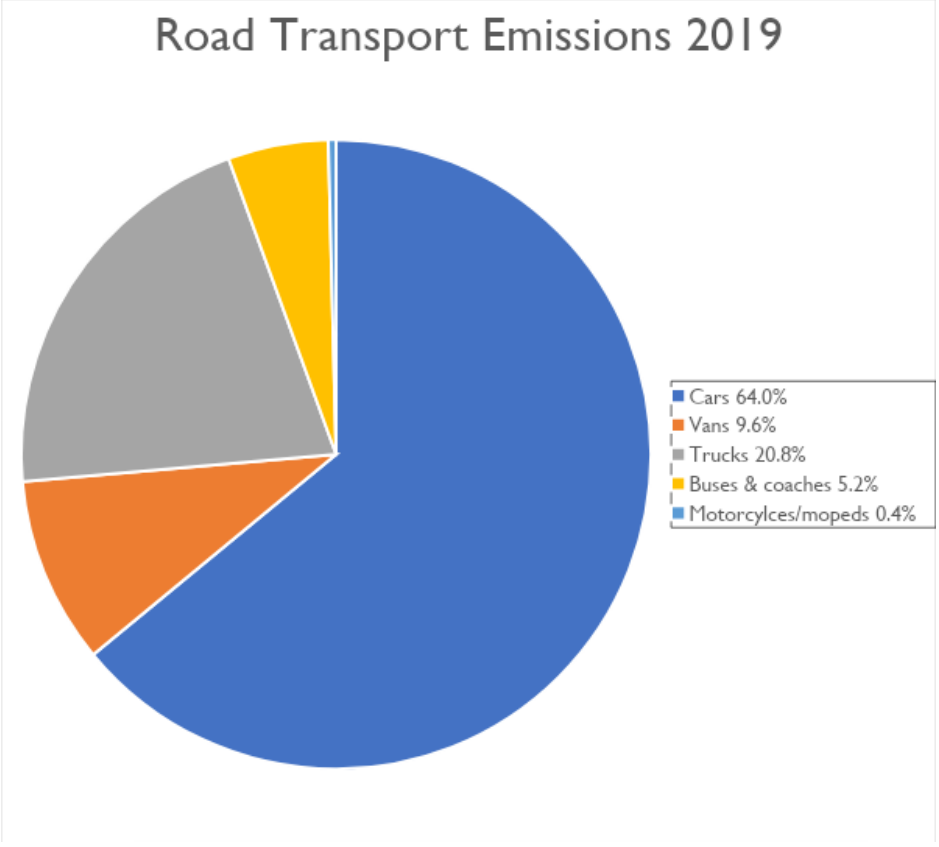

Figure 12: transport climate emissions in Scotland by vehicle type in 2019.

Road transport overtook the energy industry as the largest sector of emissions in 2015 and, until COVID, emissions were showing little sign of reducing. COVID-related changes caused a temporary drop of more than 20% in emissions.[150] In 2019 - the last pre-COVID-19 year - 64% of road transport emissions came from cars.

There are three million road vehicles in Scotland, each doing an average of 10,000 miles per year, and creating a total of around 10 $MtCO_2e$ per year. The majority source, cars, have an average age of 8 years. This helps explain why technical innovation is relatively slow in driving change.

The Scottish Government is doing a lot to promote electric vehicles. They are clearly a part of the solution, but still create congestion and air pollution (from tyre and brake dust), continue car-based planning and do nothing to contribute to the Scottish Government commitment to reducing car-km by 20% by 2030. Design of access and charging infrastructure for EVs needs to include the participation of disabled people's organisations.

Road transport imposes costs on society through congestion (approx £700m in 2019), crashes (~£900m in 2019) and building car-based infrastructure.

The Drawdown Project estimates that a global move to more walkable cities could reduce emissions by around 3,000$MtCO_2$.[151]

7.1 Current climate plan

The Climate Change Plan update[152] lists 8 outcomes for transport, with policies and proposed policies which are supposed to achieve them:

Outcome 1: To address our overreliance on cars, we will reduce car kilometres by 20% by 2030
Outcome 2: We will phase out the need for new petrol and diesel cars and vans by 2030
Outcome 3: To reduce emissions in the freight sector, we will work with the industry to understand the most efficient methods and remove the need for new petrol and diesel heavy vehicles by 2035
Outcome 4: We will work with the newly formed Bus Decarbonisation Taskforce, comprised of leaders from the bus, energy and finance sectors, to ensure that the majority of new buses purchased from 2024 are zero-emission, and to bring this date forward if possible
Outcome 5: We will work to decarbonise scheduled flights within Scotland by 2040
Outcome 6: Proportion of ferries in Scottish Government ownership which are low emission has increased to 30% by 2032
Outcome 7: By 2032 low emission solutions have been widely adopted at Scottish ports
Outcome 8: Scotland's passenger rail services will be decarbonised by 2035

The Scottish Government's plan is for steady year-on-year emissions reductions to the middle of the decade but then no further reductions at all from 2028 to 2032, despite this being the

[150] COVID-19: Scotland's transport and travel trendsTransport Scotland, 2021, https://www.transport.gov.scot/media/50410/covid-19-trends-in-transport-and-travel-in-scotland-during-the-first-year-of-the-pandemic.pdf

[151] The Drawdown Project, 2023, https://drawdown.org/solutions/table-of-solutions

[152] Climate change plan update, 2020, https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2020/12/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/documents/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/govscot%3Adocument/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero.pdf p 221 et seq

period when you would expect the 20% reduction in car-kms and ban on fossil fuel car and van sales to be having their biggest impact.

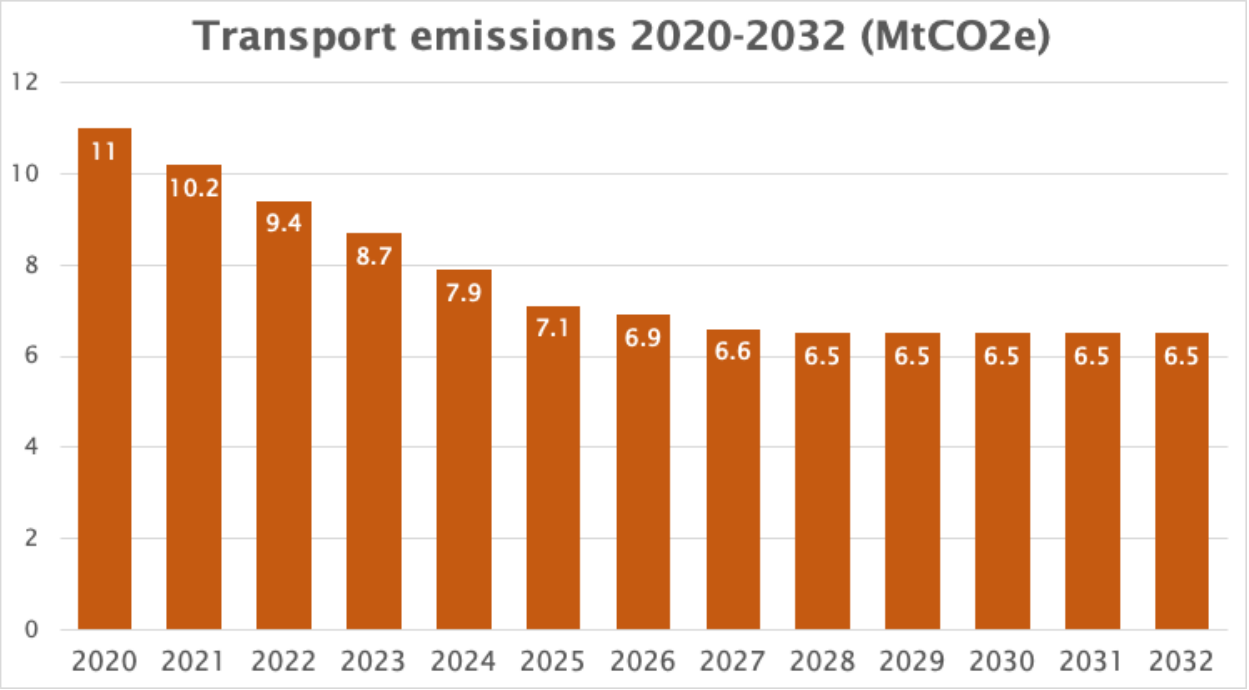

Figure 13: expected climate change emissions from all forms of transport 2020-2023

7.2 Policies

7.2.1 Strategic approaches

Halt all new trunk road and motorway building

Halting investment in major road building would reduce reliance on car travel and send a clear message about the future of transport.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Scotland spends around £800 million on motorways and trunk roads each year. This is expensive, high-carbon infrastructure, inconsistent with the climate crisis we face. Capital expenditure must be switched toward low-carbon infrastructure, including projects that enable walking, cycling and public transport, and encourage modal shift, if Scotland is to deliver an effective climate emergency response.

Since 2005/06 spending on roads has doubled, whereas funding for trains and buses has remained static or even fallen.[153] The active travel budget has been increased but remains low in percentage terms.

The Welsh Government has recently decided to end new road building except in exceptional cases.[154] There may be a case for limited local road building for access or genuine safety reasons, or for improvements for public transport or cycling, but the Scottish Government and

[153] Scottish budget 2020-21: Free bus travel in SNP-Green deal, BBC News, 2020, https://www.bbc.co.uk/news/uk-scotland-scotland-politics-51644373

[154] Welsh Government response to the Roads Review, 2023, https://www.gov.wales/welsh-government-response-roads-review-html

local authorities should deprioritise additions to the road network. There is also a maintenance backlog of £1.2bn on trunk roads[155] and £1.7bn on local authority roads[156] that will require increased investment.

This approach has been supported by the Scottish Government's own Infrastructure Commission, which called for investment to be used to deliver a *"substantial increase in the proportion of journeys made by active travel"* and *"a much greater role for public transport."*[157] The Committee on Climate Change is expected to advise the UK Government to halt its road building programme.[158]

This policy would result in savings of hundreds of millions, which would then be available for expenditure on other low-carbon policies. It would also result in benefits and opportunities in associated public policy areas, including:

- air quality improvements
- improvements in sustainable travel alternatives
- reduced land take for new road construction
- reduction in long-term conditions associated with poor air quality and/or sedentary activity, meaning cost savings for the NHS

For further information:
Road to nowhere? Calls for Scottish Government to follow Welsh lead and scrap new road building, Courier, 2021,
https://www.thecourier.co.uk/fp/business-environment/transport/2333608/road-to-nowhere-calls-for-scottish-government-to-follow-welsh-lead-and-scrap-new-road-building/

Reduce car-km by 20% by 2030

More emphasis on demand management to achieve the Scottish Government's existing commitment to reduce car-km 20% by 2030, including reducing dependence on the private motor car.

☐	International	☑	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Scotland needs to move around 6 billion person-kilometres per year travelled by car to public transport (and walking and cycling) by 2030 to meet this target. This will require an 80% increase in passenger-km travelled by bus and tram, and a more than doubling of rail passenger-km in Scotland by 2030.[159]

The government's draft 'Route Map' to achieve the very challenging 20% reduction needs a whole new strong emphasis on demand management. At present, it relies heavily on incentives of increased active travel cash, better public transport etc. However it is very clear (as strongly

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[155] Rural Economy and Connectivity Committee letter to Cabinet Secretary on for Transport, Infrastructure and Connectivity, November 2019, https://www.parliament.scot/S5_Rural/RECC_20191121_EM_to_Cab_Sec_TIC_-_pre_budget_financial_scrutiny_on_roads_maintenance_issues.pdf

[156] Scottish local road backlog 'close to £1.7bn,' Highways Magazine, March 2022, https://www.highwaysmagazine.co.uk/Scottish-local-road-backlog-close-to-1.7bn/9579

[157] Phase 1: Key findings report, Scottish Infrastructure Commission, 2020, https://infrastructurecommission.scot/storage/247/FullReport_200120a.pdf

[158] Halt new roads and developments adding to emissions, advisers to tell UK government, Guardian, June 2023, https://www.theguardian.com/environment/2023/jun/23/halt-new-roads-and-developments-adding-to-emissions-advisers-to-tell-uk-government?CMP=Share_iOSApp_Other

[159] On the Move - investing in public transport to meet carbon targets and create jobs, FoE Scotland , April 2023, https://foe.scot/wp-content/uploads/2023/04/On-the-Move-Report.pdf

stated by Committee on Climate Change CEO Chris Stark and by transport experts such as the University of Stirling's Prof Iain Docherty) that incentives alone are seriously insufficient.

It is already 3 years since the 20% reduction commitment was given, and traffic is increasing rather than falling.

The Route Map talks of publishing ideas on demand management in 2025 – and presumably implementing them even later. Meanwhile expenditure, policy development and planning for trunk road developments which will increase capacity continues (for example, the dualling of the A9 and the changes to Edinburgh's Sheriffhall roundabout).

Friends of the Earth Scotland's 'On the Move' report estimates that an additional £1.6bn investment is needed per year to meet the Scottish Government's target of reducing car traffic by 20%, and highlights the economic and social benefits this will bring. It suggests that 22,000 jobs could be directly created in Scotland by investing in public transport, plus hundreds of thousands more indirectly in areas like manufacturing and infrastructure construction. It also finds that the public transport infrastructure projects planned in the Scottish Government's Strategic Transport Projects Review 2 need to be completed by 2030, much sooner than currently scheduled, to meet the 20% car-km reduction target.

It is vital that work on, and implementation of, strong demand management policies is progressed urgently. And, as Prof Iain Docherty points out, this has to include forms of road user charging if there is to be the major impact on car-km that is needed to meet the commitment.

There are many methods of charging, and a combination is likely to be needed. All require political courage, and, for that reason, we have seen little action so far on this, the most essential and urgent demand-management tool. The UK government should be pressed on replacing petrol duty with distance-based charging (probably varied according to location and vehicle type). Scottish local authorities already have powers for local congestion charging and workplace parking levies, but must be incentivised by government to use these powers, and the powers themselves should be expanded. Another option, which could be used in combination, is the variable climate-based MOT levy discussed below - see section on road user charging policies later in this chapter for more on these points.

The implementation plan must set out a clear route map, with actions focused on the sustainable transport hierarchy - active travel at the top, then public transport, followed by electric vehicles. There is a need not only to promote active travel and public transport, but also to reduce car use, including by reducing the convenience of car driving, especially for short journeys where alternatives are available.

As part of this, the Scottish Government needs to develop active travel networks to allow for short everyday walking, wheeling or cycling journeys to be safe, including daily commutes, and to reduce dependence on cars. In addition, integration of active travel and public transport needs to be better developed to reduce the use of private cars, for example with bike storage in stations, and safer access to train stations and bus stops.

In addition, the Scottish Government - with civil society - needs to expand and improve the public discourse on transport pricing and demand reduction instruments. The Fair Fares Review is not sufficient, on its own, to achieve the improvements in public awareness and understanding that are needed.

As part of the transition, the IPPR report 'Fairly Reducing Car use in Scottish cities'[160] offers solutions to ensure that moving away from private cars does not disadvantage low-income households. This transition should include the creation of fair workplace travel plans

[160] Fairly reducing car use in Scottish Cities - a Just Transition for transport for low-income households, IPPR, 2022, https://www.ippr.org/files/2022-07/fairly-reducing-car-use-in-scottish-cities-july-22.pdf

negotiated with unions and recognise different needs for journeys, for instance, women are more likely to use public transport for care-related journeys than men, this can include more 'trip-chaining' with multiple stops to drop kids, collect shopping and care for other family members.[161]

This policy will lead to improvements in public health, both by reducing emissions from private cars and by encouraging daily exercise. There will also be a significant benefit to the economy of reduced traffic congestion in cities and towns. It will also allow reallocation of roadspace towards other uses, such as green spaces, widened pavements and cycle lanes, helping create 20-minute neighbourhoods. Public Health Scotland research shows that increasing active travel can increase social contact, community contact and local businesses footfall.

For further information:
Spokes response to the draft route map (see in particular 'Part 4')
http://www.spokes.org.uk/wp-content/uploads/2022/04/2204-20-carkm-reduction-Spokes-response.pdf
On the Move - investing in public transport to meet carbon targets and create jobs, FoE Scotland , April 2023, https://foe.scot/wp-content/uploads/2023/04/On-the-Move-Report.pdf
Assessment of demand management measures to reduce road traffic in Scotland: implications for business, Edinburgh Napier University for Transform Scotland, 2022, https://transform.scot/wp-content/uploads/2022/11/TR102-TDM-in-Scotland-Report.pdf
See also 'Stronger planning' policy in the Public Sector chapter.

Fair transport pricing

Rebalancing public transport prices to be cheaper than driving or free would create a significant shift away from car use.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Using public transport should be cheaper than driving. But over recent decades, public transport fares, and in particular bus fares, have risen far ahead of the cost of living, while car use has become cheaper in real terms. This leads to decisions like, for instance, the recent threat to withdraw night buses in Glasgow.

[161] Towards Gender Inclusive and Sustainable Transport Systems, UK Women's Budget Group, 2021, https://wbg.org.uk/analysis/uk-policy-briefings/towards-gender-inclusive-and-sustainable-transport-systems/

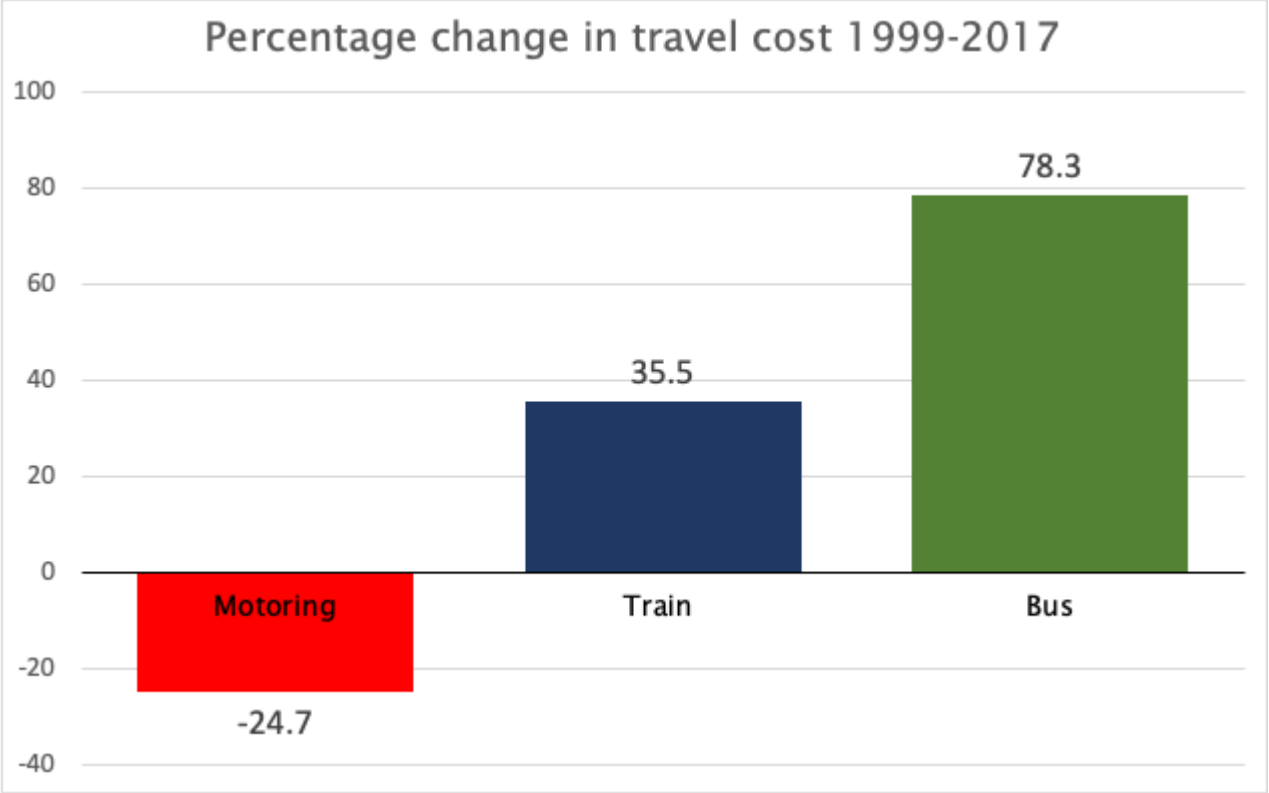

Figure14: the percentage change in the real-terms cost of UK transport from 1999 to 2017.[162]

This is particularly problematic for ethnic minorities who have been disproportionately impacted when it comes to transport costs. Public transport costs have driven up living costs for ethnic minorities 32% compared to only 10% for white people.[163]

We must rebalance prices to incentivise public transport over private car use.

For instance, the recently introduced €49 a month 'Deutschlandticket' in Germany has led to a 25% rise in passengers on regional rail services over its first three months.[164] The ticket allows as much travel as the user wants on most buses, and local, suburban and regional trains.

The policy in this chapter on free bus travel would be a big step forward, but cheaper and better train services are also needed, alongside policies which make the cost of motoring more fully reflect the costs imposed on society - see for instance policies on WorkPlace Parking Levies and a climate-based MoT levy.

For further information:
Stuck in Traffic - Meeting the Programme for Government Commitments on Sustainable Transport, Transform Scotland, 2022,
https://transform.scot/wp-content/uploads/2022/09/Stuck-in-Traffic-report-2022.pdf

Establish a city-wide zero-emission zone in operation in every city by 2030

Zero-emission zones legislation would provide a clear market signal about the removal of fossil fuel vehicles from our cities, provide the impetus needed for large-scale urban renewal

[162] You get what you pay for – 20 years of devolved transport policy, SPICE, 2019, https://spice-spotlight.scot/2019/12/04/you-get-what-you-pay-for-20-years-of-devolved-transport-policy/

[163] Falling faster amidst a cost-of-living crisis - Poverty, Inequality and Ethnicity in the UK, Runnymede, 2022, https://assets.website-files.com/61488f992b58e687f1108c7c/633d8007a3bfa49bd4cd0fa8_Runnymede%20Briefing%20Cost%20of%20Living%20FINAL.pdf

[164] Deutschlandticket: Germany's €49 ticket pushes passenger numbers up 25% on local train services, Euronews, July 2023, https://www.euronews.com/green/2023/07/31/deutschlandticket-germanys-49-ticket-pushes-passenger-numbers-up-25-on-local-train-service

programmes and provide adequate preparation time for local authorities, manufacturers and supply chain, and consumers.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Transport emissions make up a quarter of Scotland's climate emissions. Decarbonisation of transport will rely heavily on reducing emissions from private cars, the largest source of transport carbon. Climate emission reductions in the transport sector require increased walking and cycling for shorter journeys, increased public transport usage and the electrification of surface transport.

The Scottish Government committed in the Programme for Government 2019-20[165] to *"consult on Scotland's ambition to make the transformative shift to zero or ultra-low emission city centres by 2030"* but this has not been progressed.

City centres should play a leading role in the achievement of the 2030 carbon reduction target – they are where it is easiest to improve and electrify public transport, and have shorter journeys that can be more easily changed to active travel. This can be supported by freight consolidation centres transferring goods to smaller electric vehicles for local deliveries.

Whilst there is a cost to local implementation, this will help to catalyse action on government targets to phase out the purchase of fossil fuel cars and vans by 2030. It also helps deliver improvements in air quality, reduces congestion and helps build better neighbourhoods and quality of life, with their associated health improvements.

As part of the transition, the IPPR report 'Fairly Reducing Car use in Scottish cities'[166] offers solutions to ensure that moving away from private cars does not disadvantage low-income households. This transition should include the creation of fair workplace travel plans negotiated with unions and appropriate exemptions for vehicles for disabled people.

For further information:
Stuck in Traffic - Meeting the Programme for Government Commitments on Sustainable Transport, Transform Scotland, 2022,
https://transform.scot/wp-content/uploads/2022/09/Stuck-in-Traffic-report-2022.pdf

7.2.2 Public transport

Establish a zero-carbon public transport network

A decarbonised network of buses, trains and ferries must form the backbone of our transport system, with increased public ownership.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

[165] Programme for Government 2019, Scottish Government, https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2019/09/protecting-scotlands-future-governments-programme-scotland-2019-20/documents/governments-programme-scotland-2019-20/governments-programme-scotland-2019-20/govscot%3Adocument/governments-programme-scotland-2019-20.pdf

[166] Fairly reducing car use in Scottish Cities - a Just Transition for transport for low-income households, IPPR, 2022, https://www.ippr.org/files/2022-07/fairly-reducing-car-use-in-scottish-cities-july-22.pdf

FoE Scotland research[167] on meeting the 20% car-km reduction target, and the emission reduction targets, suggests that public transport needs an additional £1.6bn investment every year, to realise the potential traffic reduction and job creation benefits. It also finds that the public transport infrastructure projects planned in the Scottish Government's Strategic Transport Projects Review 2 need to be completed by 2030, much sooner than currently scheduled, to deliver the 20% car-km reduction target. As proposed in this chapter, trunk road expansion should be halted with funding diverted to sustainable transport.

Buses should have priority over cars across the road network.[168] Tram and metro systems should be reinstated in our major cities. Railways should be the fastest and easiest way to travel longer distances, especially on inter-city routes.

We need much faster delivery of bus priority measures such as bus lanes on trunk roads, and bus gates in built-up areas. Bus lanes on trunk roads and other bus priority measures are essential, and are nominally funded through the Scottish Government's Bus Partnership Fund. But progress has been very slow and only the Glasgow region appears to be advancing to infrastructure plans.

The railways must carry a far larger share of Scotland's long-distance passenger travel and freight movements. In order to meet our climate goals, we need to see a rapid shift from air to rail for Anglo-Scottish passenger trips, with the value of sleeper trains to connect highland and rural communities recognised. For freight, rail provides the most sustainable option for longer-distance movements.

With the expected lifespan of a ferry being more than 20 years, all new ferries procured will need to be zero emission to meet climate targets. Procurement rules need to be updated to drive technological improvement, and to avoid the need for relatively-new, high-emission vessels to be scrapped early or be expensively retrofitted.

Lothian Buses demonstrate the success of public ownership of public transport. The Scottish Government should work with other local authorities to help them use the powers in the 2019 Transport Act to set up their own bus companies.

Community ownership of public transport also has a good track record in Scotland, and should be part of the zero-carbon public transport mix.

For further information:
On the Move: Investing in public transport to meet carbon targets and create jobs, FoE Scotland, April 2023, https://foe.scot/wp-content/uploads/2023/04/On-the-Move-Report.pdf
Community Bus Fund, FoE Scotland, April 2023, https://foe.scot/resource/community-bus-fund-briefing/

Make bus travel free for all

The Scottish Government should make buses free for all to both combat the climate emergency, and reduce poverty and inequality.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

[167] On the Move, FoE Scotland, 2023, https://foe.scot/wp-content/uploads/2023/04/On-the-Move-Report.pdf
[168] This is already the case in theory, for instance in the Sustainable Transport Hierarchy https://www.transport.gov.scot/active-travel/developing-an-active-nation/sustainable-travel-and-the-national-transport-strategy/, but sometimes not in practice in terms of traffic flow, road space and planning decisions.

Any attempt to meet our climate change goals must involve bold action to reduce private car use and drastically increase the number of journeys taken by public transport. It must also be recognised that over seventy percent of public transport journeys are made by bus, and that buses are an especially vital form of travel for those living in low-income areas.

Over 100 cities, more than half of them in Europe, have made their public transport free and all public transport has been free in the (small) country of Luxembourg since early 2020. Behavioural research confirms the effectiveness of free public transport in changing habits.[169] In Scotland, early data shows that since the introduction of the concessionary bus travel scheme for under 22's, over 50 million journeys have been made by young people under the scheme.[170] It is clear that when cost is removed as a barrier, people use public transport and this consideration should be central in changing behaviour regarding transport.

As well as reducing carbon emissions, free bus travel has benefits for other policy areas. It supports increased access to job and educational opportunities, boosts the local economy through more expendable household income, and tackles isolation and loneliness leading to better mental health outcomes.[171] For people living on low incomes, who rely heavily on bus services,[172] these things can be harder won, and they stand to gain significantly from making our transport system more equitable as well as greener. In terms of wider government goals, free public transport will work towards reaching the child poverty targets.

An equitable transport system would tackle inequality. The gendered division of household labour and caring responsibilities means that women make more encumbered care-related journeys that may require multiple stops. Yet men are more likely to have a driving licence and less likely to live in a house without a car.[173] A more gender-just transport system would move away from design around a default white, able-bodied, middle class male user, which can exacerbate inequality. Instead, it should enable a diversity of journeys, including care-related trips which are disproportionately taken by women using buses.

This policy would directly address the cost of living crisis for many, as well as improving air quality and health. Net Zero Nation have estimated that replacing car journeys with bus journeys can help reduce CO_2 emissions by 42%.[174]

This of course must be coupled with tackling availability and accessibility, particularly in rural communities. A key principle would be to make sure of a quality service for the user, with the frequency and comprehensive coverage of the system maintained and improved compared to today.

Regarding cost, currently 55% of bus operator revenues in Scotland in 2021/22 came from public funding through concessionary travel reimbursement, Bus Service Operators Grant or supported services.[175] This has slightly increased since the pandemic, but even before then, the average level of annual subsidy between 2006/07 and 2019/20 was 46%. Taking the 2021/22 level of subsidy as a basis for calculating the total investment needed to cover all

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[169] The effects of a financial incentive on motives and intentions to commute to work with public transport in the short and long term, Journal of Environmental Psychology, 2021, https://www.sciencedirect.com/science/article/pii/S0272494421001717

[170] Over 50 million free journeys made by under 22s, Transport Scotland, 2023, https://www.transport.gov.scot/news/over-50-million-free-journeys-made-by-under-22s/

[171] Sustainability Mobility (2021) Free public transportation: Why we need it, and examples from Korean and European cities. Available at: https://sustainablemobility.iclei.org/free-public-transportation/

[172] Addressing transport barriers to work in low income neighbourhoods, Sheffield Hallam University, 2017, http://shura.shu.ac.uk/16162/1/jrf-addressing-transport-barriers.pdf

[173] Scottish Transport Statistics - Road transport vehicles, Transport Scotland, 2020, https://www.transport.gov.scot/publication/scottish-transport-statistics-no-39-2020-edition/chapter-1-road-transport-vehicles/

[174] Net Zero Scotland (Undated) Benefits of Public Transport. Available at: https://www.netzeronation.scot/take-action/public-transport/benefits-public-transport

[175] Transport Scotland (2022) *Scottish Transport Statistics 2022*. Available at: https://www.transport.gov.scot/publication/scottish-transport-statistics-2022/chapter-02-bus-and-coach-travel/

operator revenue, gives a figure of just over £598m to cover total existing revenue. That represents an increase of £269m on the existing spend of £329m. By comparison the Scottish Government budget line for rail in 2022/23 is £1,396.9m and for Motorways and Trunk Roads it is £855.8m. It is of course important to note that these costs will increase with increased usage (which free bus travel would incentivise) however these costs are used to offset revenue loss from private companies. Public ownership would change this model and its economics.

As a minimum, Scottish Government should financially support free bus trials in two Scottish cities, with urgent analysis to learn lessons with a view to expanding as widely as possible, as recommended by the Just Transition Commission,[176] and extend free bus travel to people on low incomes, including asylum seekers and people with no recourse to public funds.

The next step beyond free bus travel is to make all public transport in Scotland free. Beginning with bus travel we can help to lift people out of poverty and reduce our carbon footprint.

For further information:
COP26 Blog – Suzi Murning on Transport, SCCS, 2021,
https://www.stopclimatechaos.scot/cop26-blog-suzi-murning-on-transport/
Public Transport, Private Profit- The Human Cost of Privatizing Buses in the United Kingdom, Centre for Human Rights & Global Justice, NYU, 2021,
https://chrgj.org/wp-content/uploads/2021/07/Report-Public-Transport-Private-Profit.pdf Bus cuts across Scotland, Get Glasgow Moving, February 2023,
https://www.getglasgowmoving.org/news/buscuts/
Towards Gender Inclusive and Sustainable Transport Systems, Womens' Budget Group, 2021,
https://wbg.org.uk/analysis/uk-policy-briefings/towards-gender-inclusive-and-sustainable-transport-systems/
Government urged to make buses free to all by 2025 in net zero blueprint, Energy Live News, 2021,
https://www.energylivenews.com/2021/07/14/government-urged-to-make-buses-free-to-all-by-2025-in-net-zero-blueprint/
Everyone Aboard! Campaign page, Poverty Alliance, 2023,
https://www.povertyalliance.org/campaigns-projects/everyone-aboard/
Glaswegians call for free public transport, FoE Scotland, 2021,
https://foe.scot/press-release/glaswegians-call-for-free-public-transport/
Access to bus services, Transform Scotland, May 2023,
https://transform.scot/wp-content/uploads/2023/05/2023-05-16-Access-to-Bus-Services-debate-Transform-Scotland-briefing-paper.pdf

7.2.3 Active Travel

Increase active travel budget to at least £320m and maintain this level of funding

The Scottish Government should increase active travel and transform the places where people live and work. Active travel spending should increase to 10% of the transport budget or at least £320m by 2024/25. This level of investment should be maintained or further increased beyond 2030.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

[176] Just Transition Commission: A national mission for a fairer, greener Scotland, 2021, https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2021/03/transition-commission-national-mission-fairer-greener-scotland/documents/transition-commission-national-mission-fairer-greener-scotland/transition-commission-national-mission-fairer-greener-scotland/govscot%3Adocument/transition-commission-national-mission-fairer-greener-scotland.pdf

Walking, wheeling and cycling must be safe, convenient choices for everyone, everywhere. Our unsustainable transport system inflicts major health problems on the rest of society. But with a quarter of all car trips under two miles, and 59% under five miles, there is a massive opportunity to shift people to emission-free, healthy transport modes.[177]

Research shows that walking or cycling can realistically substitute for 41% of short car trips. This means that walking and cycling can quickly offer a 5% reduction in carbon emissions, rising to 12% by 2030 in combination with multi-modal journeys including public transport.[178]

This approach also provides other public benefits, including:

- health benefits from physical activity and casualty reduction which are positive in themselves, but also delivers savings to the NHS
- potential for economic benefits, especially through city-centre transformations
- potential to reduce social inequalities associated with vehicle ownership
- active travel infrastructure and urban realm improvements includes the opportunity to improve access for disabled people, such as wheelchair users

Both capital and resource funding are essential to enable people to cycle safely[179] - resource funding pays for vital behaviour change projects, such as cycle training projects and widening equality of access. Transport for Quality of Life found that both revenue and capital funding is needed so that programmes provide value for money - evidence from projects shows that a 20-40% share on resource funding, was capable of delivering high value for money.[180]

A further study found that successful programmes had a split of 70-80% capital to 20-30% resource funding.[181] SCCS therefore urges the Scottish Government to ensure at least an 80:20 split in its Active Travel funding between capital investment and resource funds.

For further information:
Scottish Budget 23/24 & Active Travel, Spokes, 2023,
http://www.spokes.org.uk/2022/12/scottish-budget-23-24-active-travel/

Create an expanded cycling network

The Scottish Government must commit to the long-term development and creation of a cycle network throughout Scotland linking towns and cities, with denser networks in urban areas.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The fourth National Planning Framework has committed the Scottish Government to develop a National Walking, Cycling and Wheeling Network as a national development. This should build on and expand existing routes in the National Cycle Network and other high quality cycling

[177] National Travel Survey 2020, UK Government, 2021,
https://www.gov.uk/government/statistics/national-travel-survey-2020/national-travel-survey-2020

[178] Brand et al. (2018). Lifestyle, efficiency and limits: modelling transport energy and emissions using a socio-technical approach. https://link.springer.com/article/10.1007%2Fs12053-018-9678-9

[179] Strengthening the Human Infrastructure of Cycling: White Paper, BYCS, undated,
https://bycs.org/our-work/strengthening-the-human-infrastructure-of-cycling/

[180] Finding the Optimum - Revenue / Capital Investment Balance for Sustainable Travel, Transport for Quality of Life, WSP & Sustrans, 2014,
http://www.transportforqualityoflife.com/u/files/Finding_the_Optimum_%20Revenue_Capital_Investment_Balance.pdf

[181] Summary of Outcomes of the Cycling Demonstration Towns and Cycling City and Towns Programmes, Transport for Quality of Life, 2017, https://www.sustrans.org.uk/media/2964/2964.pdf

infrastructure around Scotland. The Scottish Government's commitments for high quality Active Freeways along major roads into cities and towns and linking towns must also be part of a full, coherent network and requires many times the current level of investment.

A national 'blueprint' for the cycling network is needed to plan and guide its phased development.

Cycling infrastructure is urgently needed to enable people to cycle, and investment has been proven to increase cycling rates and provide social, economic and environmental benefits.[182] Furthermore, 75% of respondents to a survey in 2022 said that creating safe cycling infrastructure would motivate them to cycle more.[183] Each city in Scotland should have a high quality and separated main cycle network to allow for safe daily commutes and reduce dependence on motor vehicles.[184]

This 'framework' or 'skeleton' of major cycle routes throughout Scotland must be linked in urban areas with a dense network of cycling infrastructure, including:

- traffic-free routes including through green areas
- cycle lanes separated from traffic
- reconfigured roads and junctions to improve safety
- 20mph zones and quiet routes in built up residential areas
- School Streets and safe routes to school
- paths shared with pedestrians in some circumstances
- safe cycle parking and bike hangars in residential areas

The majority of funding for this network will come from the Scottish Government's transport budget but funding can also come from local government. Local Authorities should prioritise active travel infrastructure within other public realm and neighbourhood improvement projects to realise the benefits for communities and the local economy.

Disabled people's organisation need to be involved in co-designing changes to the urban landscape.

For further information:
Sustrans Scotland Manifesto Asks for Political Parties, Sustrans, 2021, https://www.sustrans.org.uk/media/8733/sustrans-scotland-manifesto-final.pdf (Ask 3)

7.2.4 Road user charging

Introduce Workplace Parking Levies, or a wider Premises Parking Levy, in Scotland's cities

Using the powers in the 2019 Transport Act to introduce Workplace Parking Levies (WPL) in Scotland's larger urban areas, would reduce car commuting and raise revenue dedicated to public transport and active travel investment.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

[182] Getting there with cycling, Cycling UK, 2022, https://www.cyclinguk.org/sites/default/files/document/2022/04/getting_there_with_cycling_stage_3_single_pages_0.pdf

[183] Attitudes and Behaviours Towards Cycling in Scotland – Wave 4, Cycling Scotland, 2022, https://www.cycling.scot/mediaLibrary/other/english/Cycling-Attitudes-and-Behaviours-Report-Wave-4-2022.pdf

[184] Worse than Covid? How do cycle lanes really affect towns and cities?, Cycling UK, 2021, https://youtu.be/EbW0mnTgQiI?list=TLGGdEBf_65fYbkwNjA2MjAyMw

A scheme of this type in Nottingham has raised £83m in its first decade, all of which has gone back into transport improvements in the city, principally the provision of electric buses and the extension of the tram network.[185] The scheme covers around 40% of the workplace parking spaces in the city, with employers providing more than 10 spaces currently paying £458 a year for each parking space included in the scheme.[186] Evidence is clear that people on higher incomes are more likely to drive to city-centre work with a dedicated free parking space. However, any workplace parking levy should be carefully designed to prevent employers from unfairly passing on the cost to low-paid workers for whom car use is essential to the delivery of their job. Equalities safeguards are also important, particularly for disabled people (exempt in the Nottingham scheme) and people with childcare/school or other caring responsibilities. Any scheme should require employers to have fair green travel to work/in work plans negotiated with the relevant recognised trade unions.

The aim of the scheme would be to reduce car commuting. Firms might also decide to reduce their number of employee parking spaces so that they reduce costs or fall below the 10 space threshold.

The powers to implement this measure are in the hands of local authorities but so far only Edinburgh and Glasgow are actively considering introducing a WPL. In Edinburgh about 31,000 spaces, eventually charged at a similar rate to the Nottingham scheme would bring in about £14m a year, with Glasgow estimating £30m for a city-wide scheme. The Glasgow scheme is estimated to cost £1m-£1.6m to set up.[187] The Scottish Government should work with local authorities to help fund the development and delivery of schemes, and to promote their acceptability with the public and with local politicians.

In order to deter further car-based development, and gradually reduce existing, the WPL should be expanded to a wider 'Premises Levy.' This would be a charge on businesses such as large retail and leisure, based on the number of (non-disabled) customer car spaces over a certain minimum. Businesses would then be incentivised to encourage customer modal shift to public transport and active travel, enabling the business to regain valuable land-space and thus reduce their levy payment. Businesses might alternatively decide to pass on part or all of the levy to customers but might be reluctant to do so for fear of losing custom. Whichever approach they took, there would be encouragement of modal shift. A beneficial side-effect would be to discourage out-of-town development and encourage more local living.

The concept of a wider premises levy has been widely discussed, but, unfortunately, was rejected by the Scottish Government when the WPL powers were introduced. Such a levy (though out-of-town only) is again proposed in the Scottish Government's A New Future for Scotland's Town Centres (section 73d).[188] Making the levy applicable to in-town as well as out-of-town would lessen the risk (mentioned in 73d) of induced additional town-centre car traffic.

For further information:
Financing Climate Justice,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

Introduce a climate-based MoT levy

[185] How Nottingham used a parking levy to cut congestion and raise millions', Friends of the Earth, 2021, https://takeclimateaction.uk/climate-action/how-nottingham-used-parking-levy-cut-congestion-and-raise-millions
[186] Workplace parking guidance, Nottingham City Council, 2022, https://www.nottinghamcity.gov.uk/wpl
[187] Glasgow Transport Strategy update in papers for Environment, Sustainability and Carbon Reduction City Policy Committee, Glasgow City Council, 1st February 2022, https://www.glasgow.gov.uk/councillorsandcommittees/viewSelectedPack.asp?c=P6J5FQDX0G2UT181
[188] A New Future for Scotland's Town Centres, Scottish Government, 2021, https://www.gov.scot/publications/new-future-scotlands-town-centres/pages/7/

The Scottish Government should introduce a climate-based levy on annual MoT tests

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Such a policy will impose real carbon costs on those who pollute, linked to the degree of pollution generated; it will also incentivise a substantial shift to electric vehicles and, where possible, to personal use of active and public transport – in turn driving improvements in congestion, air pollution and public health. Importantly such a policy protects those who live in remoter areas, where there is often no real alternative to use of personal vehicles.

The 2020 travel survey found that 50% to 60% of relatively poorer households in Scotland had no access to a car, whereas it was 5% or less for wealthier households.[189] In the 2019 Scottish Household Survey, it appears that in rural areas about 15% of households have no access to a car, compared to 28% nationwide and, for example, 47% in Glasgow.[190]

Nonetheless, policies should be carefully designed to give extra support to groups who will find it harder to transition away from fossil fuels, including those on lower income who currently do not have realistic alternatives to the car for essential journeys.

The current UK cost of carbon, under the UK emissions trading scheme, is about £80 per tonne of CO_2. So, the social cost/value of Scottish road emissions is about £800m per year. It would be logical to reflect this cost in reality and to adopt an appropriate mechanism which would, consequently, also change behaviours and reduce emissions, while recognising and delivering the social imperatives of supporting poorer and more remote communities.

The average age of road vehicles is 8 years, so relatively few are below the age (3 years) of the first legally-required MoT.

The national MoT system is entirely electronic, and can access information on the postcode of the registered owner, the make of vehicle and engine type, as well as the recorded mileage and, therefore, the distance travelled over the previous year.

An automated system could easily calculate the supplement, or levy, to be added to the fixed cost of the MoT, dependent on geographical location, vehicle emissions and annual mileage.

This might, for example, range from zero for an electric car in a remote location, for whatever mileage is recorded, to a rather substantial sum for a large diesel SUV, doing a high mileage, and used in an urban area where there is easy access to alternative active and public transport (walking, cycling, rail, bus, taxis, car-clubs). The Scottish Government already has a 3-level classification of geographical areas, which can easily be linked to postcode, for remote rural, accessible rural and urban areas.[191]

To gather in a total return approaching, say, £800m per year would entail an average levy of around £250 per vehicle per year. So, it could be that levies would typically be set ranging from zero at one end of the scale to, perhaps, £500 at the other extreme.

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[189] Transport and Travel in Scotland: results from the Scottish Household Survey 2020 Telephone Survey, Transport Scotland, 2022, ttps://www.transport.gov.scot/media/50980/transport-and-travel-in-scotland-2020-results-from-the-scottish-household-survey-pdf-version.pdf

[190] Scottish household survey 2019: supplementary analysis, Scottish Government, 2020, https://www.gov.scot/publications/scottish-household-survey-2019-supplementary-analysis/pages/6/

[191] Scottish Government Urban Rural Classification 2020, https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2022/05/scottish-government-urban-rural-classification-2020/documents/scottish-government-urban-rural-classification-2020-3-fold-map/scottish-government-urban-rural-classification-2020-3-fold-map/govscot%3Adocument/scottish-government-urban-rural-classification-2020-3-fold-map.pdf

For further information:
IMPACT - Isle of Man Programme for Achievement of Climate Targets, James Curran, 2019, https://www.gov.im/media/1368097/gd20190102_james-curran-report.pdf

7.2.5 Electric vehicles

Provide funding for EVs for community transport

Transport Scotland and local government should scale-up funding for local community organisations and projects to purchase Electric Vehicles, decarbonise their fleets and empower local people to take climate action.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

Community Transport is always for a social purpose and never for a profit. Over 170 local charities, community groups and social enterprises are delivering accessible and sustainable transport services and projects in urban, rural and island communities across Scotland where the public transport system has failed. Community Bus Services, community car clubs and active travel projects are empowering local people to change behaviours, reduce emissions and reduce private car use.

Despite challenging times and an historic lack of investment, the Community Transport sector is leading the way – 12% of the sector's national fleet is electric, compared to just 2% of all road vehicles in Scotland. However, the sector faces a serious 'net zero funding gap', as the higher upfront capital costs of EVs are prohibitive for most operators. Recent research estimates that £87.4m of investment is likely to be required to decarbonise the sector. Transport Scotland, as well as local government, need to invest to close this gap.

This policy helps make sure that older people, disabled people, rural communities and others are not left behind on Scotland's journey to net zero.

For further information:
Mapping Scotland: #MoreThanaMinibus, Community Transport Association, 2022, https://ctauk.org/morethanaminibus/

7.2.6 Freight

Introduce freight consolidation centres to support deliveries in zero emission zones

A network of freight consolidation centres is needed to ensure that low and zero carbon delivery systems can make the final delivery of goods in urban areas.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

To support the homes and business in low-emission zones, local authorities need to introduce freight consolidation centres/last mile delivery networks. Light goods vehicle miles driven in Scotland have expanded 30% in the last ten years. Consolidation centres are needed on the edge of city zero-emission zones, to help improve delivery efficiency and ensure deliveries are made by zero-emission vehicles, including e-cargo bikes, replacing larger fossil fuel vehicles.

More investment in active travel infrastructure will enable greater use of e-cargo bikes.

For further information:
Supporting urban consolidation centres with urban freight transport policies: a comparative study of Scotland and Sweden, International Journal of Logistics Research and Applications, 2019,
https://www.tandfonline.com/doi/abs/10.1080/13675567.2019.1679743?journalCode=cjol20
Cargo bike Scotland, Sustrans, 2022,
https://www.sustrans.org.uk/our-blog/projects/2022/scotland/cargo-bike-scotland-project

7.2.7 Aviation

Introduce a Frequent Flyer Levy

A Frequent Flyer Levy would discourage people from taking multiple flights in one year, reducing emissions and addressing a major inequality in our transport system.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

A UK-wide Frequent Flyer Levy is likely to be simplest and most efficient. However, Scotland is due to control Air Departure Tax (ADT), the Scottish replacement for Air Passenger Duty. There will be bands within the Duty for different distances of flights. The same power could potentially be used to introduce a Frequent Flyer Levy, through or replacing ADT.

While the current Air Passenger Duty (APD) levies a charge per flight, an additional Frequent Flyer Levy on top of the new ADT could be used to disincentive people from taking multiple flights in a given year. A Frequent Flyer Levy recognises the inequality built into aviation - for domestic flights, 90% are taken by just 2% of the UK population and nine out of ten people never take one.[192] This policy would not penalise a family taking the occasional holiday but would discourage those who fly regularly. 78% of Scotland's Climate Assembly members supported the introduction of a frequent flyer tax or levy[193].

Aviation emissions are not only a substantial portion of overall transport emissions but, until COVID, they were rising year-on-year, with no measures at all to curb this. The additional revenue should be spent on sustainable surface transport options, which could lead to further emissions decreases from private car use.

Consideration would be needed on appropriate exemptions to a Frequent Flyer Levy, for instance for those island communities that depend on flights for lifeline services[194] and for those less able to undertake alternative journeys. A well-designed levy would strongly deliver on the Polluter Pays Principle.

For further information:

[192] Frequent flyers: 90% of domestic flights taken by 2% of people, according to new research, Independent, November 2021,
https://www.independent.co.uk/travel/news-and-advice/frequent-flyers-domestic-flights-uk-b1954900.html
[193] Scotland's Climate Assembly Recommendations for Action, 2021
https://involve.org.uk/sites/default/files/field/attachemnt/Scotland%27s%20Climate%20Assembly%20Recommendations%20for%20Action.WebVersion%20%282%29%20%282%29.pdf
[194] Lifeline air services, Transport Scotland, undated,
https://www.transport.gov.scot/public-transport/air-travel/lifeline-air-services/

Financing Climate Justice,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf
Aviation Strategy response, Transform Scotland, 2022,
https://transform.scot/wp-content/uploads/2022/01/Aviation-Strategy-discussion-paper-Transform-Scotland-2022-01-21-1.pdf
A frequent flyer levy- sharing aviation's carbon budget in a net-zero world, New Economics Foundation, 2021,https://neweconomics.org/2021/07/a-frequent-flyer-levy
Stay Grounded home page: https://stay-grounded.org

Stop Airport Expansion

Stop any future airport expansions

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The aviation industry is a significant source of pollution across the whole of the UK. Aviation semissions were consistently climbing pre-pandemic. We cannot allow airport expansix on which will increase demand and increase flight numbers. We should be working teo litimmit demand and encourage users to use alternative forms of travel.

With so many airports trying to expand, urgent action is needed. Despite the claims of the airlines, aeroplane technology is developing too slowly to reduce emissions quickly enough.

Air travel cannot continue unabated and a managed approach to limiting expansion is the right thing to do to limit emissions. A managed approach to limiting air travel will also allow the UK and Scottish Governments to ensure the best possible outcome for aviation workers.

There is also significant local opposition to airport expansion plans across the UK.

For further information:
Stop Airport Expansions - New Economics Foundation,
https://neweconomics.org/campaigns/stop-airport-expansions
Tell UK Government to Stop Airport Expansion - Friends of the Earth England, Wales and Northern Ireland,
https://action.friendsoftheearth.uk/petition/tell-uk-government-stop-airport-expansion
Safe Landing, a Just Transition for Aviation Workers group,
https://safe-landing.org/
Stay Grounded home page: https://stay-grounded.org

Introduce restrictions on short haul flights

Restrict internal flights within the UK mainland where straightforward alternative travel options are available by public transport, and ensure travelling overland is more affordable.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

An average short haul flight creates six times more climate change per passenger than the same journey by rail (based on UK Government figures[195]).

As part of France's 2021 climate law a restriction on short haul flights is being introduced following approval by the European Commission.[196] The plan is to abolish flights between cities that are linked by a train journey of less than 2.5 hours.

The Scottish Government would need to work with the UK Government to introduce this kind of policy, and to ensure that island communities were protected.

For further information:
Aviation Strategy response, Transform Scotland, 2022, https://transform.scot/wp-content/uploads/2022/01/Aviation-Strategy-discussion-paper-Transform-Scotland-2022-01-21-1.pdf
Setting limits on flights, Stay Grounded, https://stay-grounded.org/setting-limits-on-flights/

Introduce restrictions on private jets

Restrict the use of private planes while using the tax system to disincentivise them, in line with the principle that polluters should be made to pay for their damage.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The emissions-per-person of using private jets[197] are enormous and incompatible with a country and government taking a range of other steps to address greenhouse gas emissions from transport. The number of private jets has doubled in the last twenty years and continues to grow.[198] France has proposed restricting private jets.[199]

Private plane passengers are often not subject to the same security and safety processes as public aviation passengers. In addition to this obvious unfairness, this also presents additional security risks.

Ideally the Scottish Government would work with the UK and Welsh Governments to put in place restrictions across mainland Britain, or potentially use the tax system to disincentivise the use of private jets. This could involve imposing new higher tax rates on private jet use through either reforming Air Passenger Duty at UK level or at Scotland level through the devolution of APD, and its replacement with Airport Departure Tax (see section 4.2.2 - funding climate action).

For further information:
Ban private jets - end luxury emissions, Stay Grounded, https://stay-grounded.org/ban-private-jets/

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[195] Let's make it easier to choose train over plane, Campaign for Better Transport, 2023, https://bettertransport.org.uk/blog/lets-make-it-easier-to-choose-train-over-plane

[196] It's official: France bans short haul domestic flights in favour of train travel, Euronews, 2023, https://www.euronews.com/green/2022/12/02/is-france-banning-private-jets-everything-we-know-from-a-week-of-green-transport-proposals

[197] Private planes, usually jets but sometimes propeller-driven, are owned by individuals, companies or charter firms and carry small numbers of people.

[198] Private jet sales likely to reach highest ever level this year, report says, Guardian, 2023, https://www.theguardian.com/world/2023/may/01/private-jet-sales-likely-to-reach-highest-ever-level-this-year-report-says

[199] French minister calls for restrictions on flights by private jet, FT, 2022, https://www.ft.com/content/ee29efce-f9e9-49b1-93e3-75817a2e1a01

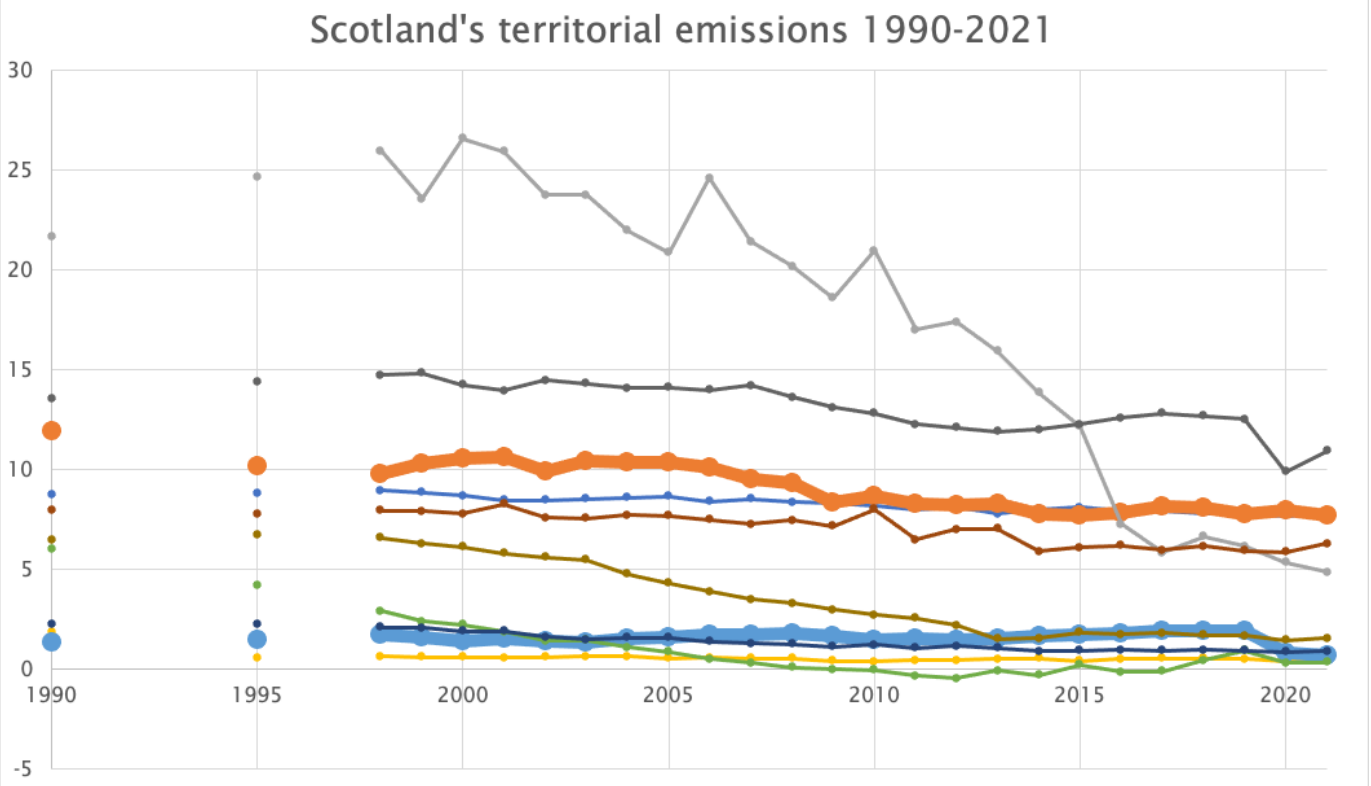
Ban private jets petition, Greenpeace,
https://www.greenpeace.org/international/act/ban-private-jets/
Forthcoming Oxfam paper on making polluters pay.

8. Business and Industry

Emissions from the Business Sector cover emissions from fuel combustion and product use in industrial and commercial sectors, and fluorinated greenhouse gas emissions from refrigeration and air conditioning in all sectors, plus industrial off-road machinery. Emissions from the Industrial Processes Sector cover emissions resulting from industrial processes, except for those associated with fuel combustion. Government figures show that combined emissions from these sectors fell by 27% between 1990 and 2020, most of this because of the closure of much of the steel industry in the early 1990s.

Some larger businesses are part of the UK Emissions Trading Scheme (UK ETS) and others will already be paying the Climate Change Levy (CCL) on their electricity and fuel bills. The UK ETS covers energy intensive industries, the power generation sector and aviation for flights departing from or arriving in the UK. It covers around 100 participants in Scotland, accounting for 28% of Scotland's greenhouse gas emissions.[200] Fossil-fuelled power stations pay the CCL at a reduced rate, and the steel industry has been completely exempt since 2013.

Of course businesses are also responsible for emissions from buildings, transport, food productions and land use, which appear in other chapters of this document. For instance, there are around 220,000 non-domestic buildings in Scotland, accounting for 6% of Scotland's total climate emissions, and about twice the proportion are in the lowest energy efficiency bands compared to domestic properties. Public body Business Energy Scotland provides free energy advice and loans to Small and Medium-sized Enterprises and finds savings of an average of 24% on the energy bills of firms they work with.[201]



[200] UK Emissions Trading Scheme, Scottish Government, 2022, https://www.gov.scot/policies/climate-change/emissions-trading-scheme/

[201] Business Energy Scotland home page, 2023, https://businessenergyscotland.org

Figure 14: emissions in $MtCO_2e$ from the business and industry sectors 1990-2021, showing a fall of 27%. Business (orange line) and Industrial Processes (blue line).

Most businesses also fund pensions for workers, and the investment portfolio of these pension schemes can make climate change worse or better - see for example the policy about divesting public sector pensions from fossil fuel investments in the Public Sector chapter.

Many businesses assess their performance against Environmental, Social and Governance (ESG) principles but these are subsidiary to the fiduciary duty of public companies to maximise shareholders value, a duty which is frequently in conflict with environmental and social aims, or at least said to be in conflict.

Businesses also buy things and this procurement spend can come with a large carbon footprint - see for example the public procurement policy in the Public Sector chapter. For many businesses, Scope 3 emissions account for more than 70 percent of their carbon footprint.[202] This carbon footprint also extends to the energy consumed in providing and accessing services electronically. Emails alone are estimated to account for 0.3% of global climate emissions.[203]

8.1 Current climate plan

The Climate Change Plan update[204] lists only two outcomes for industry, with policies and proposed policies which are supposed to achieve them:

Outcome 1: Scotland's Industrial sector will be on a managed pathway to decarbonisation, whilst remaining highly competitive and on a sustainable growth trajectory
Outcome 2: Technologies critical to further industrial emissions reduction (such as carbon capture and storage and production and injection of hydrogen into the gas grid) are operating at commercial scale by 2030

The Scottish Government's plan is for a slow year-on-year emissions reductions to the middle of the decade, with a steeper reduction thereafter. The later reductions are mainly based on assumptions about the deployment of carbon capture and storage that the Scottish Government has since acknowledged are unrealistic.[205]

[202] https://www2.deloitte.com/uk/en/focus/climate-change/zero-in-on-scope-1-2-and-3-emissions.html

[203] The Carbon Cost of an Email: Update!, Carbon Literacy Project, 2022, https://carbonliteracy.com/the-carbon-cost-of-an-email/

[204] Climate change plan update, 2020, https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2020/12/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/documents/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/govscot%3Adocument/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero.pdf p 221 et seq

[205] Climate Change Pan: Monitoring Reports, Scottish Government, 2022, https://www.gov.scot/binaries/content/documents/govscot/publications/progress-report/2022/05/climate-change-plan-monitoring-reports-2022/documents/climate-change-plan-monitoring-reports-2022/climate-change-plan-monitoring-reports-2022/govscot%3Adocument/climate-change-plan-monitoring-reports-2022.pdf

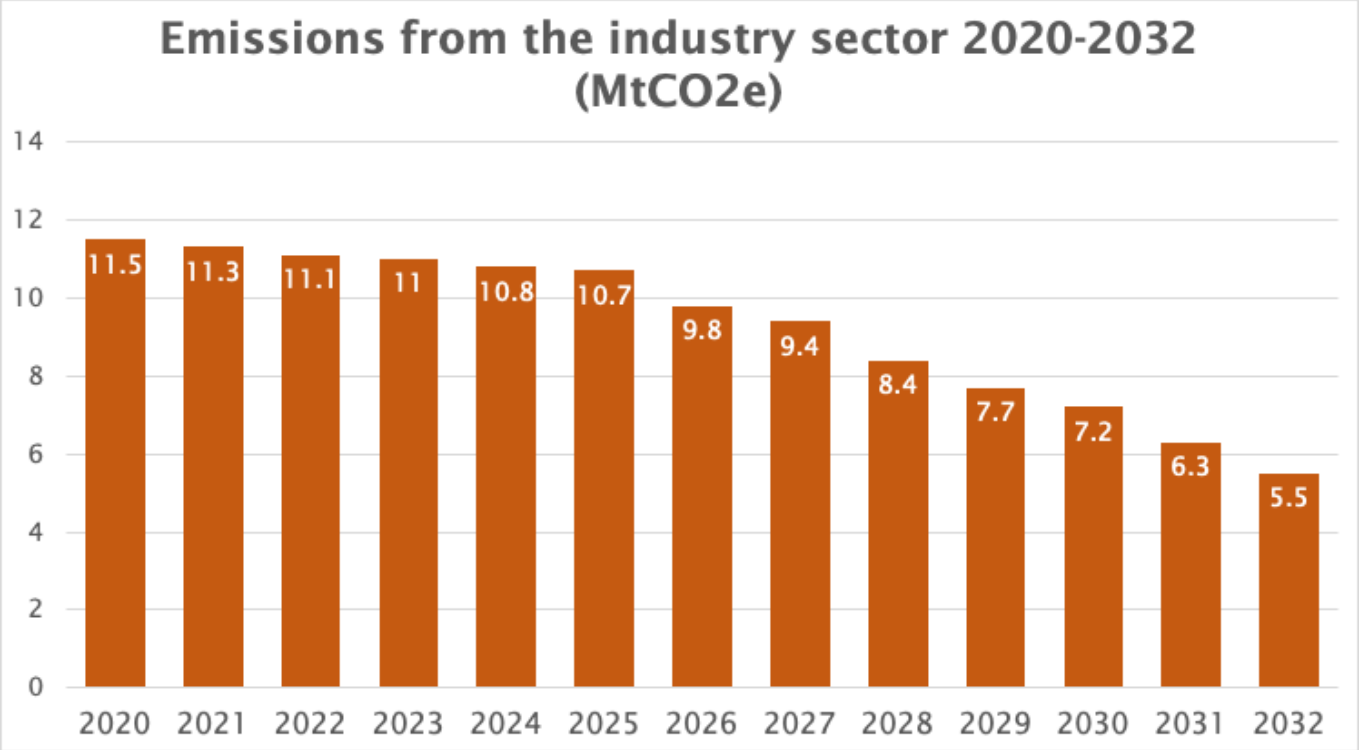


Figure 15: expected climate change emissions from the industry sector 2020-2023

8.2 Policies

Boost business participation in climate action

Proactively harness the power of businesses across Scotland for climate action and sustainable development by investing in awareness raising, and cultural and behaviour change programmes; asking more from businesses, including ensuring those accessing public money are, at a minimum, required to commit to learning about climate change and their role in driving transformative climate action, and stressing the opportunities and long-term business benefits of acting on climate change.

☐	International	☑	UK Govt	☑	Scottish Govt	☑	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Scotland should deepen understanding of climate change across all kinds of businesses while creating platforms for meaningful and sustained public engagement.

While the introduction of an Environmental Impact element to the voluntary Scottish Business Pledge was positive, it remains optional and the Scottish Government should use public procurement to drive improved business practice through greater conditionality. The Scottish Parliament's lead committee on climate change previously said that businesses in receipt of public money should "demonstrate credible action" in delivering social and environmental objectives. This should be embedded within initiatives like Fair Work First, or equivalent procurement focused schemes, making it compulsory for decision-making managers to undertake climate training (for instance, RSGS' Climate Solutions) and then to identify specific actions to support transformative climate action in support of Scotland's national climate change aims.

A significant factor in uptake of climate measures within public and private sectors is a lack of traction and knowledge of solutions within senior positions. A fairly simple way to rectify this, beyond universal education, is to introduce minimum requirements for board membership, so that every board is encouraged to appoint at least one climate lead with relevant expertise.

This would help embed the commitment to net zero, embolden people within organisations to bring forward changes, and protect the organisations by ensuring they had market prescience and clarity around risks and opportunities attached to innovation and investment. It should be a reasonable expectation of any organisation with a serious net zero commitment and helps evidence that commitment, providing a strategic voice which challenges tendencies of short termism and one dimensional fiscal predominance in decision making.

For further information:
Scottish Business Pledge - Environmental Impact, Scottish Business Pledge, https://scottishbusinesspledge.scot/pledge-elements/environmental-impact/
Climate Solutions, RSGS, https://www.rsgs.org/climate-solutions
Care, Climate and COVID-19 - building a wellbeing economy in Scotland, Oxfam, 2020, p17-19, -https://oxfamapps.org/scotland/wp-content/uploads/2020/11/CARE-CLIMATE-AND-COVID-19-November-23-2020.pdf

Scotland and the emissions trading scheme

Given Scotland's climate targets are more ambitious than those at UK level, the UK Emissions Trading Scheme needs to put industry in Scotland on track to deliver a fair share of Scotland's climate targets, which means reducing allowances faster than needed only to meet the UK's targets and also reducing the amount of free allowances allocated at a faster rate than at the UK level. Free allowances for the oil and gas industry should be scrapped.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

The UK Emissions Trading Scheme (UK ETS) replaces the EU Emissions Trading Scheme for UK businesses. The UK ETS covers energy intensive industries, the power generation sector and aviation for flights departing from or arriving in the UK. It covers around 100 participants in Scotland, accounting for 28% of Scotland's greenhouse gas emissions.[206] A range of industries can claim compensation for the impact of the UK ETS on their production costs.[207]

It is a 'cap and trade' system. So there is an annual cap on the number of allowances in the scheme and participants can trade with each other or participate in auctions to gather sufficient allowances to cover the emissions for which they are responsible. An allowance is worth 1tCO_2e. The amount of allowances in the scheme decreases every year as total allowable emissions decrease. Many industries, including fossil fuel extraction and aviation are given free allowances, totalling nearly half of all allowances. It is particularly egregious that in 2022 oil platforms in UK waters were allocated 3.2 million free allowances, amounting to a hidden subsidy to fossil fuel extraction of around £250m a year.[208] These free allowances should be scrapped immediately.

Since Scotland has more ambitious emission reduction targets than the rest of the UK, industry here needs to reduce emissions more quickly than in the rest of the UK, if it is to deliver a fair share of the overall effort needed to meet our targets. Thus the UK ETS needs to be adapted to drive emission reductions from businesses in Scotland faster.

For further information:

[206] UK Emissions Trading Scheme, Scottish Government, 2022, https://www.gov.scot/policies/climate-change/emissions-trading-scheme/
[207] Compensation for the indirect costs of the UK ETS and the CPS mechanism: guidance for applicants, UK Government, 2022, https://www.gov.uk/government/publications/uk-emissions-trading-scheme-and-carbon-price-support-apply-for-compensation/compensation-for-the-indirect-costs-of-the-uk-ets-and-the-cps-mechanism-guidance-for-applicants
[208] UK ETS Allocation Table for operators of installations, UK Government, May 2022, https://www.gov.uk/government/publications/uk-ets-allocation-table-for-operators-of-installations

Financing Climate Justice,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

Link business rates to carbon footprint

Link the level of business rates to a business' carbon footprint.

☐	International	☑	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Starting with the need for mandatory emissions reporting, this measure could drive improvements in businesses from chip shops to sporting estates. Likely to be designed to be fiscally neutral overall, there would be winners and losers but not a big income stream to the public purse.

Some businesses will be part of the UK Emissions Trading Scheme or paying the Climate Change Levy on their electricity and fuel bills. These are both UK schemes, so this additional element of payment or reduction on business rates would be an additional Scottish carbon-valuing measure to further incentivise climate emissions reductions.

There would need to be a graded approach based on business size. The CBI supports the use of business rates to drive energy efficiency and green technology (although their support was only about *lower* business rates).[209]

Some assessment tools and services exist but there would need to be a centralised co-ordination of standards and systems to assess business footprints. Including Scope 3 emissions - those created indirectly within a company's value chain[210] - in a later phase of implementing the measure would help businesses understand the carbon footprint of their supply chain, although the uncertainties involved in calculating these would mean this would not necessarily be used to influence their level of business rates in the first instance.

At the UK level this approach could be applied through Corporation Tax. A system just in Scotland would need to deal with any confusion between business landlords and the business itself.

For further information:
Financing Climate Justice,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

Develop a Scottish steel strategy

Reduce the carbon intensity of steel production, including through greater recycling.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

[209] A reformed business rates system could play key role in powering a green industrial revolution, CBI, 2020, https://www.cbi.org.uk/media-centre/articles/a-reformed-business-rates-system-could-play-key-role-in-powering-a-green-industrial-revolution-cbiavison-young/

[210] Briefing: What are Scope 3 emissions?, Carbon Trust, 2022, https://www.carbontrust.com/resources/briefing-what-are-scope-3-emissions

Steel is a vital part of our economy today and it still will be in the future, even a more sustainable, circular economy future. The replacement of oil and gas with renewables is at the heart of plans for an energy revolution in Scotland. By 2030, one million tonnes of material, the vast majority of this high-quality scrap steel, will be available from oil and gas decommissioning. This could be reused as the building blocks needed for new wind farms.

There is at least one proposal for a low or zero-carbon electric arc furnace to do this work,[211] but the economic case is hard to make without government assistance because of high energy costs.[212]

In 2018, every tonne of steel produced emitted on average 1.85 tonnes of greenhouse gases and total production accounted for about 8% of global greenhouse gas emissions.[213] A study by Zero Waste Scotland found that creating a circular steel hub in Scotland could save 60% of the carbon emissions.[214]

This change could be used to create not just the green energy we need for a sustainable future, but an integrated and circular system of material use as well. We could keep valuable scrap steel in Scotland, reusing the fossil fuel infrastructure of the past to create the renewable energy infrastructure needed for our new economy.

Today, all of Scotland's scrap steel is exported for recycling, sometimes to the rest of the UK but also further afield, to countries like Turkey and China, where coal is used to process the steel. Even in the UK, 80% of steel is processed in coal-fuelled blast furnaces, according to the World Steel Association. Scotland must not miss out on a huge opportunity to piece together the two ends of the energy transition.

Another recent report from Zero Waste Scotland[215] shows that a 300,000 tonne electric arc furnace would create 665 jobs and add £389m to the Scottish economy. The report states that creating a domestic steel supply chain *"would need to represent a strategic decision at a governmental level and necessitate considered intervention,"*

For further information:
Steel recycling is essential for a greener future, FoE Scotland, 2022,
https://foe.scot/steel-recycling-is-essential-for-a-greener-future/

9. Waste and the Circular Economy

Emissions from the Waste Sector cover emissions from waste disposed to landfill sites and the treatment of wastewater.

[211] Steel Position Paper, Friends of the Earth Scotland, 2022, https://foe.scot/resource/steel-position-paper/
[212] Welsh example - Future Tory PM tasked with Tata talks over demand for £1.5bn in subsidies, Guardian, July 2022, https://www.theguardian.com/business/2022/jul/22/tata-needs-15bn-subsidies-keep-port-talbot-steelworks-open-south-wales
[213] Decarbonization challenge for steel, McKinsey, 2020, https://www.mckinsey.com/industries/metals-and-mining/our-insights/decarbonization-challenge-for-steel
[214] How should Scotland manage its scrap steel?, ZWS, 2021, https://www.zerowastescotland.org.uk/resources/how-should-scotland-manage-its-scrap-steel
[215] Circular Steel in Scotland - Current landscape and opportunities, ZWS, July 2023, https://cdn.zerowastescotland.org.uk/managed-downloads/mf-qwstm9se-1688475468d

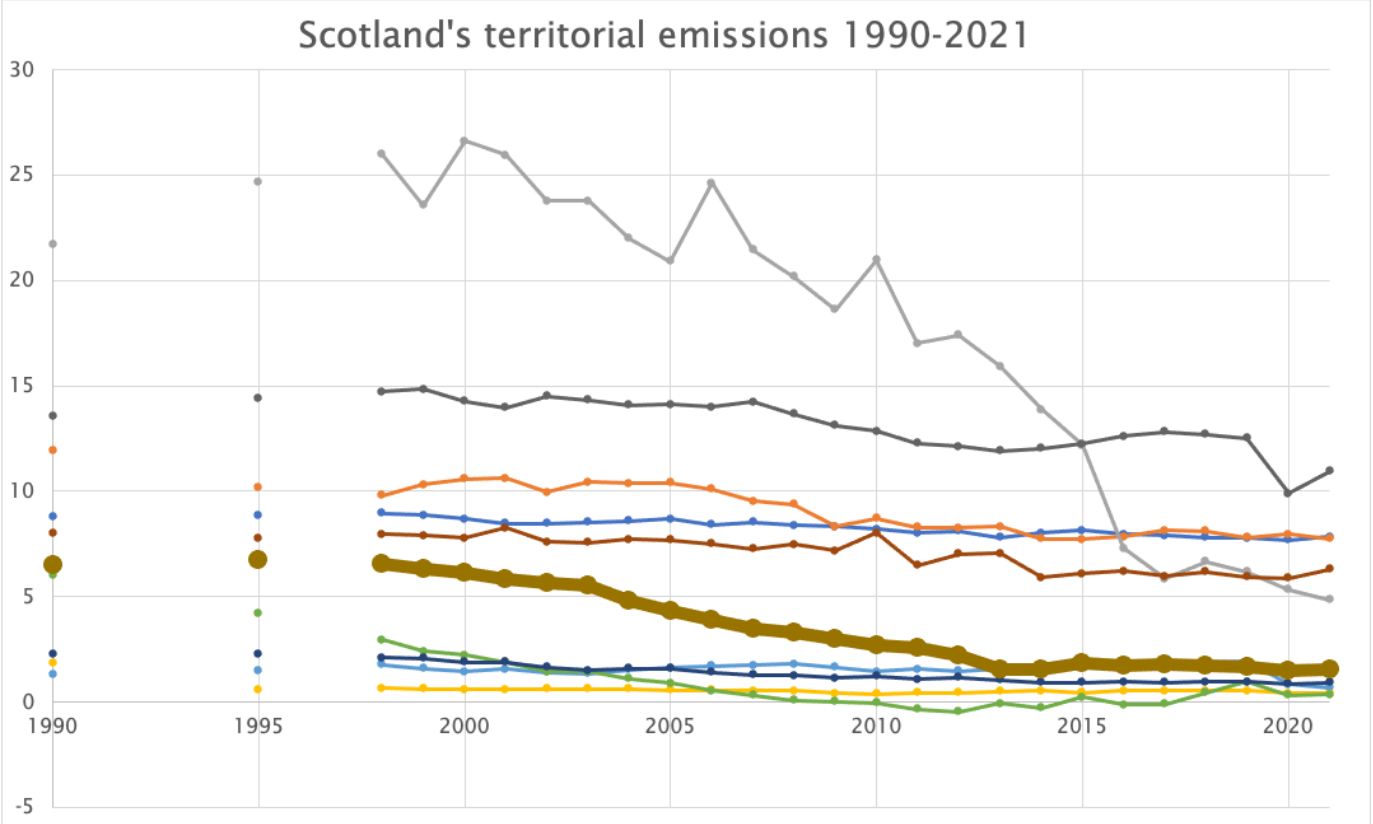


Figure 16: emissions in $MtCO_2e$ from the waste sector 1990-2021, showing a fall of 76%.

The official figures for emissions from the waste sector look impressive with a 76% fall since 1990. This is in large part because methane which used to simply escape from active and closed landfill sites is now captured to make electricity. But the figures are misleading because emissions from incinerating waste are not included, despite much of the emissions coming from fossil-fuel-based plastic.

Including our demand for goods from overseas, our total climate footprint, or consumption emissions, only reduced by about 24% between 1998 and 2019, and our total carbon footprint is about 70% larger than our territorial emissions.[216]

A recent report from Zero Waste Scotland found:[217]

- only 1.3% of the resources Scotland uses are cycled back into the economy, with over 98% of Scotland's material use coming from virgin resources
- Scotland's per capita material footprint is 21.7 tonnes, nearly double the global average of 11.9 tonnes.
- high consumption and extraction of materials tie into a similarly large consumption-based carbon footprint of $75MtCO_2e$.

This means that consumption in Scotland is unsustainably high. This is, in part, due to the quantity of things we buy – but also due to the way we operate as a society.

The Scottish Deposit-Return Scheme, supported by many SCCS members, would have reduced carbon emissions by $4MtCO_2$ over 25 years.[218] The delay to the scheme and exclusion of glass is regrettable.

[216] Scotland's Carbon Footprint: 1998-2019, Scottish Government, 2023, https://www.gov.scot/news/scotlands-carbon-footprint-1998-2019/

[217] The Circularity Gap Report, Zero Waste Scotland, 2023, https://www.zerowastescotland.org.uk/resources/circularity-gap-report

[218] DRS - the benefits, Zero Waste Scotland, https://depositreturnscheme.zerowastescotland.org.uk/benefits

9.1 Current climate plan

The Climate Change Plan update[219] lists 4 outcomes for waste and the circular economy, with policies and proposed policies which are supposed to achieve them:

Outcome 1: Reduction in waste sent to landfill
Outcome 2: Reduction in emissions from closed landfill sites.
Outcome 3: A reduction in food waste
Outcome 4: Reduce waste and establish a more circular economy, where goods and materials are kept in use for longer.

The Scottish Government's plan is for a steady year-on-year emissions reductions to 2026 but then no further reductions at all from 2026 to 2032.

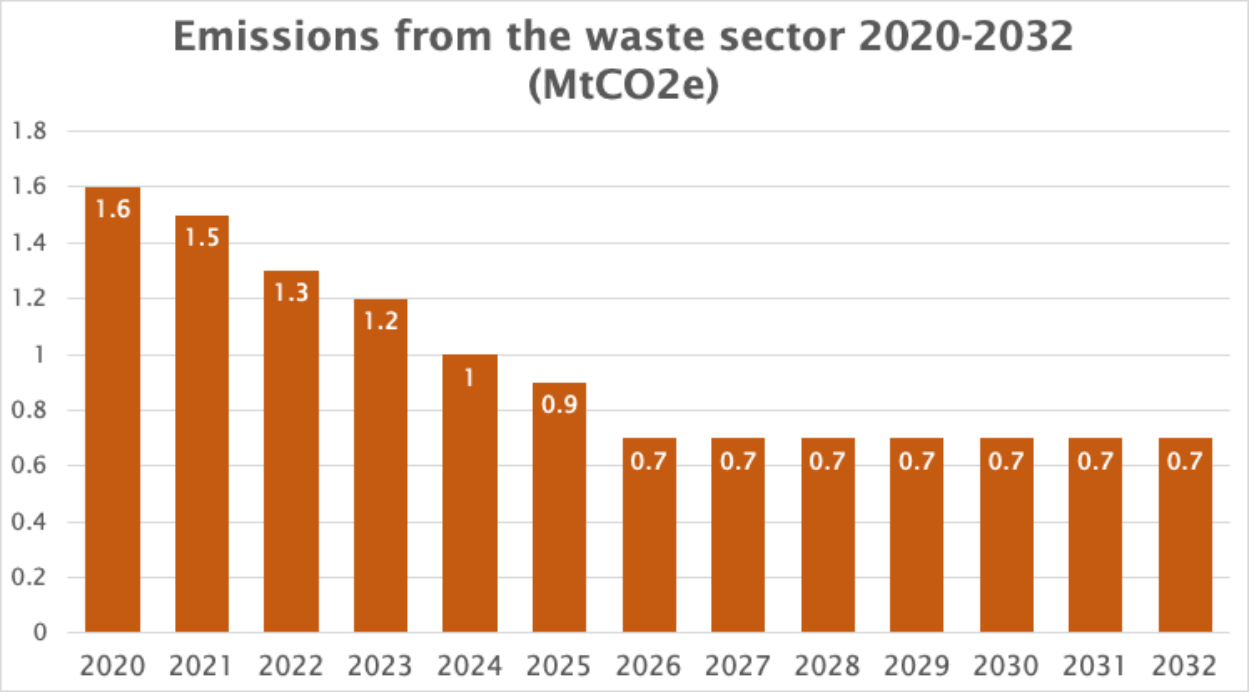


Figure 17: expected climate change emissions from the waste sector 2020-2023

9.2 Policies

9.2.1 Strategic approaches

Deliver a circular economy

Move to a Scotland which is litter free and has a circular economy.

☑	International	☑	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Litter is a matter of significant public concern, with 87% of people believing it to be an issue across Scotland. In 2022, Keep Scotland Beautiful declared a litter emergency in Scotland

[219] Climate change plan update, 2020, https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2020/12/securing-green-recovery-path-net-zero-update-climate-change-plan-20182032/documents/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/govscot%3Adocument/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero.pdf p 221 et seq

following warnings that a failure to deal with the consequences of the most complained about environmental problem should not be underestimated. Datasets show that the number of sites with a significant presence of litter has continued to rise across our most deprived areas. The data shows that not only is the gap between most and least deprived areas widening, but that those communities within most deprived areas are experiencing a disproportionate increase in the number of sites recorded with a significant presence of litter.

Despite the many other pressing issues that we are currently facing, the environment – including the local environmental quality of our neighbourhoods – is something that matters to us all. Across Scotland people care about the places and spaces that we live in, work in and visit. Importantly, collective effort alongside meaningful resources is needed to tackle the litter emergency - creating a litter-free and circular economy for Scotland.

Working together, this is a problem that we can overcome and will also lead to important and positive impact on efforts to tackle climate change and biodiversity loss. The reality is that current behaviours and approaches are not enough to influence the trends of overconsumption and decline in local environmental quality that have now been reported for a number of years.

Measures such as the 'plastic ban', Extended Producer Responsibility schemes for packaging and other problem-items like mattresses, toys and textiles, a Deposit Return Scheme for Scotland, the forthcoming Circular Economy legislation in Scotland, campaigning for a ban on plastic-containing wet wipes and single-use vapes are all activities that will help to curb our litter problem and drive Scotland towards a Circular Economy.

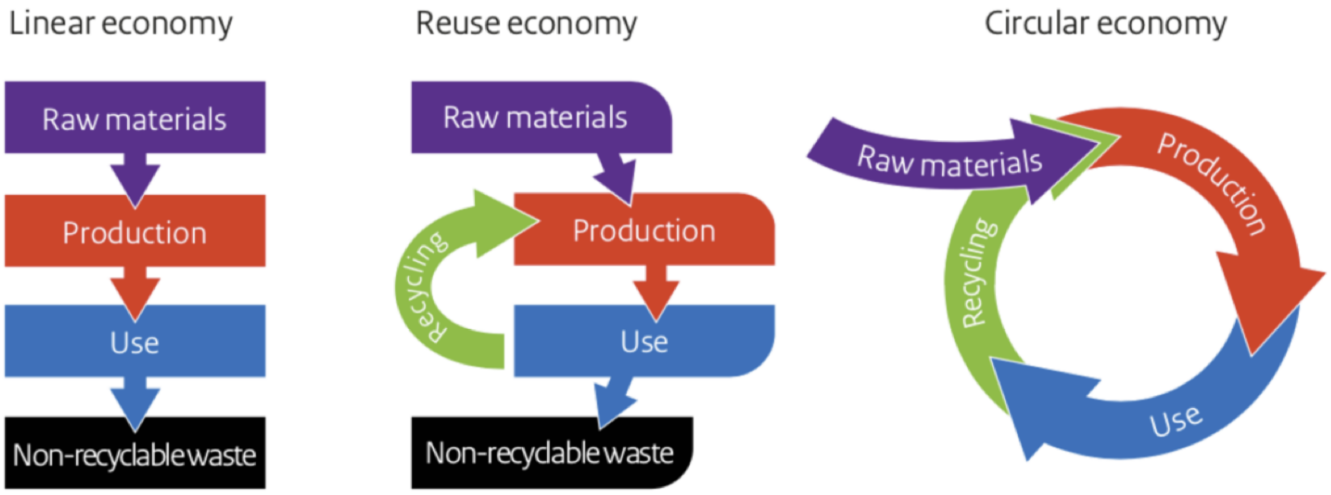


Figure 18: a Circular Economy keeps valuable materials in use repeatedly and for as long as possible.

All of these measures, including the new National Litter and Flytipping Strategy for Scotland, need investment in enforcement if they are to make a difference.

Climate education and climate action have many co-benefits which include: improved understanding of wider climate impact on issues such as justice; improvements to human health and wellbeing; increasing focus and action on nature and biodiversity restoration; and, sustainability and circular principles.

Just Transition principles of equity, participation and protection of security of employment must be applied in the move towards a more circular economy.

For further information:
Circular Economy Bill briefing, FoE Scotland, 2023,
https://foe.scot/wp-content/uploads/2023/05/Circular-Economy-Bill-briefing.pdf

Time for a new approach: tackling the litter emergency, Keep Scotland Beautiful, 2022, https://www.keepscotlandbeautiful.org/media/1570958/tackling-the-litter-emergency_dec-2022.pdf
Call for a Strong Circular Economy Bill for Scotland, Scottish Environment LINK, 2022, https://www.scotlink.org/wp-content/uploads/2022/04/CE-Bill-call-for-April-2022-FINAL-1.pdf
KSB 2022 Local Government Manifesto: https://www.keepscotlandbeautiful.org/media/1568968/keep-scotland-beautiful-manifesto-asks-2022.pdf
The National Litter and Flytipping Strategy for Scotland, KSB, 2023, https://www.keepscotlandbeautiful.org/tackling-litter-and-waste/the-national-litter-and-flytipping-strategy-for-scotland/
Call for Just Transition principles to be applied to moves towards a circular economy, Just Transition Partnership, 2022, https://www.jtp.scot/policy/call-for-just-transition-principles-to-be-applied-to-moves-towards-a-circular-economy/
See also the policies in the 'Resource targets and responsibilities' section of this chapter.

Minimise demand for transition materials

Develop a Resource Justice Strategy to deal with energy transition materials, such as lithium, which are needed for the energy transition.

☑	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Transition minerals such as the metals cobalt, lithium, manganese, nickel and rare earth elements are vital to the energy transition away from fossil fuels. While Scotland must transform its energy systems to meet its climate goals, to do so without minimising demand for transition minerals will compromise the aims of a Just Transition and risk failing to deliver a fully renewable energy system.

The social and environmental damage created by transition mineral supply chains is extensive and serious, including human rights and labour abuses, environmental destruction and associated exacerbation of climate injustice. As countries around the world seek to decarbonise their energy systems, demand for transition minerals is predicted to increase rapidly, alongside the associated social and environmental harm. For instance, the global demand for lithium could increase by as much as fifty times over the next twenty years and currently only a tiny fraction of used lithium is recycled.

The Scottish Government must create a Resource Justice Strategy for Scotland, which includes within it a plan for fair and sustainable consumption of transition minerals.

The aim of the Resource Justice Strategy should be to ensure Scotland's consumption of materials is sustainable as soon as possible and no later than 2045. The approach should be guided by statutory and science-based consumption reduction targets, with 2030 interim targets to ensure action begins as soon as possible. Successfully meeting these targets will require policies which focus on demand reduction, the development of clear and transparent datasets and the implementation of a collaborative policy process.

The Resource Justice Strategy should include specific requirements to ensure Scotland's consumption of transition minerals is sustainable and just as the energy transition progresses. Other material policies, such as Scotland's Circular Economy Strategy and Waste Route Map, should also be part of the Resource Justice Strategy framework. Existing policies should be adapted to reflect the Resource Justice Strategy and those policies under development should embed the strategy's overarching principles.

The Resource Justice Strategy should be based on five key pillars:

1. commitment to a globally-just material transition
2. consumption reduction targets
3. demand reduction policies
4. clear and transparent data
5. fair and collaborative policy process

For further information:
Unearthing injustice - a global approach to transition minerals, FoE Scotland, May 2023, https://foe.scot/wp-content/uploads/2023/05/Unearthing-Injustice.pdf

Increase reuse and repair investment

Create a system of reuse and repair credits for social enterprises based on the carbon savings they are making.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

A circular Scotland would move beyond recycling by encouraging circular behaviours such as reuse and repair to become mainstream activities. Compared to the levels of investment in recycling over the past 20 years, an even greater level of investment is now needed in reuse and repair services and infrastructure.

The Scottish Government should provide funding for reuse charities and social enterprises which is linked to the environmental benefits of their reuse and repair activities. Reuse and repair combats climate change through carbon savings. Like feed-in tariffs for green energy generation, reuse and repair credits should be paid to social enterprises for the carbon savings associated with the material diverted through reuse and repair activities (for example, a fixed financial value for every CO_2e per tonne of material diverted). This money will help the receiving organisations to scale up and grow their activities.

There are social benefits to reuse and repair. Reuse creates far more green and local jobs than recycling, incineration, or landfill activities.[220] Reuse organisations are also helping to combat the current cost of living crisis through offering affordable goods to those who need them.

There needs to be stronger direct financial support for innovative models such as repair cafés, sharing libraries, bike reuse services and community fridges, as well as continuing Scottish Government funding for the Share and Repair Network.[221] These projects provide easy and tangible access for the public to engage in circular economy behaviours. However, they require initial support in the form of grant funding, as well as ongoing operational support.

For further information:
Policy Paper for Scotland Circular Economy Bill, Circular Communities Scotland, May 2022, https://www.circularcommunities.scot/wp-content/uploads/2022/05/Scotlands-Circular-Economy-Bill-Policy-Paper.pdf

Embrace a right to repair

Put into law the principle of a universal right to repair.

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[220] Briefing on job creation potential in the re-use sector, RREUSE, 2015, https://www.rreuse.org/wp-content/uploads/Final-briefing-on-reuse-jobs-website-2.pdf

[221] Share and Repair Network home page, 2023, https://shareandrepair.scot/

☐	International	☑	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The following would support repair in Scotland:

- circular design practices that promote ease of repair and discourage planned obsolescence
- access to parts at a reasonable cost
- access to repair information and how-to guides
- access to independent repair systems
- promotion of safe self-repair
- fiscal incentives for repair services and refurbished parts (including VAT).

Some of this could be done by the Scottish Government or local authorities, some of it only by the UK Government.

The recent introduction of a Repairability Index in France[222] is an excellent example of how consumers can be educated on repair and producers encouraged to make their products more repairable.

For further information:
European Right to Repair campaign https://repair.eu
Policy Paper for Scotland Circular Economy Bill, Circular Communities Scotland, May 2022, https://www.circularcommunities.scot/wp-content/uploads/2022/05/Scotlands-Circular-Economy-Bill-Policy-Paper.pdf

Expand Extended Producer Responsibility schemes

Expand Extended Producer Responsibility schemes to include, for instance wind turbine blades, fishing and aquaculture gear, mattresses and textiles

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The principle of producers taking responsibility for their products over the whole lifecycle of that product is positive, and helps deliver on the Polluter Pays principle.

In addition, Extended Producer Responsibility (EPR) schemes have the potential to bring in much needed funding from the private sector to invest in mitigating the environmental impact of these products at the end of their life.

In practice EPR implementation can sometimes conflict with existing re-use and preparation for re-use activities when implemented poorly, notably by restricting access for re-use operators to discarded yet re-useable goods.[223] There are several examples across Europe where EPR schemes have damaged environmental social enterprises by removing access to valuable material that they were preparing for reuse.

The Scottish Government should bring forward EPR schemes which:

[222] Implemented on five categories of goods in January 2021.

[223] See RREUSE briefing on Extended Producer Responsibility, 2013, https://rreuse.org/position-paper-on-the-role-of-extended-producer-responsibility-in-promoting-product-reuse-and-preparation-for-reuse-activities/

- are mindful of the waste hierarchy by prioritising local reuse and repair over large recycling schemes
- strongly discourage the export of waste materials for overseas processing, which significantly undermines public confidence in recycling[224]
- support and invest in local circular economy projects, including those delivered by local charities and social enterprises

Any implementation of EPR should include commitments to prioritise third and social sector reuse organisations.[225]

For further information:
Policy Paper for Scotland Circular Economy Bill, Circular Communities Scotland, May 2022, https://www.circularcommunities.scot/wp-content/uploads/2022/05/Scotlands-Circular-Economy-Bill-Policy-Paper.pdf

Develop a sustainable biomass strategy

Develop the data collection and a strategy for the sustainable use of biomass in materials and energy production.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Biomass is supposed to replace less sustainable materials in construction, plastics in almost every application and fossil fuels in electricity generation. While we need to use more timber in construction, substituting concrete and steel, we need a strategy for sustainable biomass to ensure that increased demands for biomass do not result in habitat destruction and biodiversity loss, and decisions are based on sound carbon accounting.

Biomass is a key, often overlooked, part of the circular economy – and the Scottish Government should commit to setting sustainable biomass targets when data becomes available.

For further information:
Policy Paper for Scotland Circular Economy Bill, Circular Communities Scotland, May 2022, https://www.circularcommunities.scot/wp-content/uploads/2022/05/Scotlands-Circular-Economy-Bill-Policy-Paper.pdf
Call for a Strong Circular Economy Bill for Scotland, Scottish Environment LINK, 2022, https://www.scotlink.org/wp-content/uploads/2022/04/CE-Bill-call-for-April-2022-FINAL-1.pdf

Embed justice in the UN Plastics Treaty

The UK Government should seek to use its influence to ensure that justice is a key plank of the UN plastics treaty, an international agreement that will set obligations on countries across the entire plastics lifecycle.

☑	International	☑	UK Govt	☐	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

[224] There is a case to consider an outright ban on the export of waste.

[225] For example in Spain a new law mandates 50% of public tenders relating to collection, transport and treatment of second-hand products, go to social enterprises.

The UK Government must recognise that plastic pollution is not just an environmental problem but also a social one which affects millions of humans and so push for a treaty that fully addresses the impacts of plastic pollution on people living in poverty.

The UK Government has signed up as members of a High Ambition Coalition for the treaty - a group of countries who want an ambitious treaty that brings an end to plastic pollution by 2040 - and as part of this the UK government should include in its negotiating position for a far-reaching plastic treaty measures around:

- Reduction: legally binding targets to reduce plastic production and scale up reuse solutions
- Recycling: universal access to waste collection and recycling
- Respect: support for waste pickers, including a Just Transition
- Response: mechanisms to ensure businesses and governments take action

For further information:
Plastic pollution and poverty, Tearfund, 2022,
https://learn.tearfund.org/en/resources/policy-reports/plastic-pollution-and-poverty

9.2.2 Resource targets and responsibilities

Set carbon and material consumption reduction targets

Set carbon and material footprint targets to drive the circular economy and reduce climate emissions.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

In Scotland we use more than twice the sustainable limit of materials but the impact of this consumption on people and the environment is often hidden. Imports are not included in Scotland's existing climate targets. Only by accounting for our global impact, can Scotland play its part in a truly sustainable future. Consumption reduction targets are vital to reduce the amount of materials consumed by Scotland to sustainable levels, and enable the shift to a more circular economy. When the Scottish Government consulted on the Circular Economy Bill in 2022, 86% of responders supported consumption reduction targets.[226]

In Scotland, we consumed over 100 million tonnes of materials in 2018 alone[227] and globally, material consumption exceeded sustainable limits decades ago.[228] Material consumption reduction targets, as well as carbon-based ones, are vital because climate change is not the only ecological crisis that we face – there are many, from biodiversity loss to soil erosion. These crises share a common underlying cause – overconsumption of the Earth's natural resources.

In the same way that we have targets for territorial emissions of climate change gases, Scotland should set targets for the amount of materials used and the carbon content of our consumption of goods and services. The headline indicator of progress towards a Circular Economy must provide an indication of what is environmentally sustainable and measure material

[226] Delivering Scotland's circular economy: Proposed Circular Economy Bill - Consultation analysis, Scottish Government, 2022, https://www.gov.scot/publications/delivering-scotlands-circular-economy-proposed-circular-economy-bill-consultation-analysis/

[227] Material Flow Accounts, Zero Waste Scotland, March 2023, https://www.zerowastescotland.org.uk/resources/material-flow-accounts-mfa

[228] National responsibility for ecological breakdown: a fair share assessment of resource use 1970-2017, Hickel et al., 2022, https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(22)00044-4/fulltext

consumption. Both carbon impacts and material consumption must be reduced so two headline targets are required. These targets should be statutory and science-based.

- the overall aim of Scotland's circular economy should be to reduce material consumption to sustainable levels in a just and fair way as fast as possible and by 2045 at the latest
- carbon-based consumption targets - Scotland should adopt a greenhouse gas emissions-based target to reduce Scotland's carbon footprint to zero by 2045, with an interim target to reduce Scotland's carbon footprint by 75% by 2030 based on 1998 levels. Without targets to guide our actions, Scotland will not achieve our climate goals, on which our future depends. This target is the minimum which the science tells us must be achieved by Scotland if we are to stay within the 1.5 degree goal of the Paris Agreement
- material-based consumption targets - Scotland should adopt a materials-based target to reduce Scotland's material consumption by 57% (8 tonnes per person) by 2045, with an interim target to reduce material consumption by 30% (13 tonnes per person) by 2030 based on 2017 levels

Targets should be set in the primary legislation of the Circular Economy Bill, with a requirement on Ministers to report to Parliament on progress towards carbon targets annually, as is required for domestic carbon emissions under climate change legislation. The targets should cover all of Scotland's material use, not just wasted material. Wasted material accounts for 12% of the 100Mt total material consumed by Scotland in 2018 and 15% of the carbon in our materials.[229] Along with carbon consumption reduction targets, these would complement Scotland's existing climate targets, which aim to reduce domestic emissions.

For further information:
Response to the circular economy bill consultation, FoE Scotland, 2022,
https://foe.scot/resource/response-to-the-circular-economy-bill-consultation/
See also the 'Consumption emissions' policy in the Cross-cutting policies chapter.

Set national reuse targets

Scotland currently has no reuse target but does have a clear recycling target. This has resulted in poor prioritisation of reuse investment and system change compared to recycling[230] and other activities lower down the waste hierarchy.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Clear and ambitious preparations for reuse[231] targets are necessary to support prioritising reuse over recycling, in line with the principles of the waste hierarchy. These preparation for reuse targets should be mandated at a Scottish level and reported alongside existing recycling targets for local authorities.

[229] Material Flow Accounts, Zero Waste Scotland, March 2023, https://www.zerowastescotland.org.uk/resources/material-flow-accounts-mfa & Scotland's Carbon Footprint: 1998-2019, Scottish Government, 2023, https://www.gov.scot/news/scotlands-carbon-footprint-1998-2019/

[230] For example, in Scotland as well as recycling targets and reporting, we have a recycling charter, recycling centres and a recycling infrastructure fund.

[231] Preparation for Reuse relates to taking items from the waste stream (e.g., an HWRC site) and diverting them for reuse. Reuse includes all reuse activities and is much broader and more difficult to measure. This is the language of the EU Waste Hierarchy, We are calling for Preparation for Reuse Targets to be implemented in Scotland even if we use the phrase Reuse Targets.

Figure 19: the Waste Hierarchy

Where possible Local Authorities should partner with existing third-sector organisations who have been leading in relation to reuse in Scotland.

There is an urgent need for research to establish the best way to measure and report reuse and preparation for reuse levels in Scotland. However, since reuse and preparation for reuse targets are being used successfully elsewhere in Europe, such targets should work well here and we should learn from these international examples.[232]

Once targets are set, Scotland needs a clear process to monitor and report actual progress against targets on a local authority and national level, and to act when progress is insufficient.

At a European level, work is progressing in France, Spain, and Belgium to implement reuse or preparing for reuse targets,[233] and ambitious preparation for reuse targets are about to be implemented in Portugal. All this demonstrates that such targets are feasible.

It should be noted that targets by themselves do not deliver change, they need to be supported by investment and other policy actions. But they are important to focus attention and show when progress is inadequate.

For further information:

[232] For example, CRNI and the Discover Centre in Ireland have done some strong research on reuse targets, e.g. https://crni.ie/content/uploads/2017/09/EPA_RDC-Metrics-Final-Aug17.pdf

[233] See RREUSE's recent publication Re-use targets, why they matter and what initiatives already exist in the EU, 2022, https://rreuse.org/wp-content/uploads/2022/03/re-use-targets-factsheet.pdf

Policy Paper for Scotland Circular Economy Bill, Circular Communities Scotland, May 2022, https://www.circularcommunities.scot/wp-content/uploads/2022/05/Scotlands-Circular-Economy-Bill-Policy-Paper.pdf
See also the policy 'Carbon and material consumption reduction targets' in this chapter.

Set clear responsibilities for the circular economy

For Scotland to achieve a strong and ambitious circular economy many stakeholders need to work in collaboration to achieve system change. A new single entity with a statutory foundation should own circular economy strategy, targets and progress reporting.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

In addition, this body should

- own, oversee and report all circular economy related targets
- oversee a circular economy action plan (as part of the existing climate action plan)
- support collaboration between public, private and third sectors in delivering a more circular economy
- provide strong investment funding required to deliver a circular economy
- deliver strong national and local campaigns, including in formal education, to increase public awareness of the need to reduce consumption and increase reuse, repair, and recycling behaviours

An independent advisory group should be established and adequately funded, to support the work of this new agency with appropriate representatives from local authorities, private enterprise, community and third sector organisations and international perspectives.

For further information:
Policy Paper for Scotland Circular Economy Bill, Circular Communities Scotland, May 2022, https://www.circularcommunities.scot/wp-content/uploads/2022/05/Scotlands-Circular-Economy-Bill-Policy-Paper.pdf

Ban unnecessary product destruction

Ban companies from destroying surplus stock.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Currently there is no ban on companies destroying surplus stock, despite several media stories highlighting stock destruction on a massive scale.[234]

A more environmentally and socially responsible solution is needed to guide companies towards better waste management practices. There should be clear measures in place to prevent the destruction of unsold or returned products. This could be via direct mandated legislation or through the introduction of mandatory reporting, financial charges or other strong deterrents. There should also be steps to ensure that the principles of the waste

[234] For example this 2021 report by ITV regarding a major internet retailer: https://www.itv.com/news/2021-06-21/amazon-destroying-millions-of-items-of-unsold-stock-in-one-of-its-uk-warehouses-every-year-itv-news-investigation-finds

hierarchy are followed – reuse (or in this case use for the first time) should be prioritised over recycling for example.

The consultation on a Circular Economy Bill for Scotland raises the idea of a ban on the destruction of unsold goods. This proposal could be strengthened by also including a ban on supermarkets destroying unsold food, as implemented in France in 2016.[235]

For further information:
Policy Paper for Scotland Circular Economy Bill, Circular Communities Scotland, May 2022, https://www.circularcommunities.scot/wp-content/uploads/2022/05/Scotlands-Circular-Economy-Bill-Policy-Paper.pdf

Phase out single use and harmful products

Ban single use produces like vapes and those which have a harmful environmental impact in use or upon disposal.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The current single use plastics ban is welcome, but only tackles a small range of products. The Scottish Government consulted on extending the ban to other items[236] at the end of 2022 but this needs to be progressed urgently. There is the potential to do so much more.[237]

Rather than tackling individual items, the Scottish Government should set a target date to ban all single use items where readily available alternatives exist.[238] For high volume and material resource products, such as coffee cups, earlier bans should be implemented.

So far, there has been little to no enforcement of the single use plastics ban since it has been introduced and this needs to change.

One potential route to remove single use items is through the strong delivery of Extended Producer Responsibility, see the policy on this in this chapter.

For further information:
Policy Paper for Scotland Circular Economy Bill, Circular Communities Scotland, May 2022, https://www.circularcommunities.scot/wp-content/uploads/2022/05/Scotlands-Circular-Economy-Bill-Policy-Paper.pdf

Set a target to reduce food waste

Set a new target to reduce food waste by 50% from the 2013 baseline by 2032.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

[235] See France's law for fighting food waste

[236] Call for evidence: Single-use food containers and other single-use items, Scottish Government, 2022, https://consult.gov.scot/environment-forestry/single-use-items/

[237] Ireland has committed to all packaging being re-useable or recyclable by 2030. Ireland's Waste Action Plan for a Circular Economy 2020, https://www.gov.ie/en/publication/4221c-waste-action-plan-for-a-circular-economy/

[238] Some limited exceptions will be needed for example for medical use

The Drawdown Project ranks reducing food waste as its most-effective climate solution, with a potential to reduce global emissions by around 95,000MtCO_2 over the next 30 years.[239] The current target for Scotland is to reduce food waste by 33% from the 2013 baseline by 2025. The Scottish Government has committed to produce a Food Waste Reduction Plan and Zero Waste Scotland has laid out what should be in it and the benefits it would bring, including a reduction in waste of nearly 300,000 tonnes, an economic benefit of nearly £2.7 billion and a carbon saving of 1.5% of Scotland's annual emissions.[240]

However, in order to continue to reduce food waste across Scotland, a new target to reduce food waste by 50% from the 2013 baseline by 2032 should be adopted.

There is also a need to tackle food waste on farms. A WWF report found that over six billion meals' worth of edible food goes to waste before even making it off farms in the UK.

For further information:
New report shines spotlight on millions of tonnes of edible food going to waste on uk farms, WWF-UK, 2022,
https://www.wwf.org.uk/press-release/hidden-waste-report-shines-light-uk-food-waste

9.2.3 Invest in facilities

Create a statutory requirement for reuse facilities

Require local authorities to provide reuse facilities, with central funding.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Currently local authority recycling sites in Scotland are geared towards recycling rather than reuse. Many have no provision for reuse at all, while others are inadequate. Currently, too many items which could be reused are being sent for recycling or even incineration or landfill.

There is a mixed picture for reuse services at Scottish recycling centres, with examples of good practice and collaboration in some areas. Three Local Authority sites[241] have co-location with a reuse project, which should be considered best practice for reuse.

The Scottish Government should create a statutory requirement for high-quality "Set Aside for Reuse" facilities at every Local Authority Household Waste Recycling Centre in Scotland.[242] This requirement should also state that local authorities should prioritise donating appropriate materials to local social enterprises wherever practical to do so. We would also support these sites being renamed in line with circular economy values, for example 'Resource Centres.'

Investment should target:

- prioritising reuse for site visitors – set-aside for reuse should be the first and most visible option on entry
- clear signage and directions for site visitors
- weather-proof storage facilities to protect donations

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[239] The Drawdown Project, 2023, https://drawdown.org/solutions/table-of-solutions

[240] Scotland's Food Waste Reduction Action Plan, Zero Waste Scotland, 2023, https://www.zerowastescotland.org.uk/resources/scotlands-food-waste-reduction-action-plan

[241] Stranraer, Moray, and Oban.

[242] A similar requirement has recently become law in Greece. Integrated framework for Waste Management Article 18, required all local authorities (municipalities) with a population over 20,000 inhabitants to develop and operate at least one Centre for the Creative Reuse of Materials.

- investing in site staff education around set-aside for reuse
- supporting on-site collaboration with circular economy organisations
- investing in public education campaigns around reuse and circular economy

Items donated at these facilities should be passed on to circular economy organisations to further stimulate the local economy.

A comprehensive baseline assessment of the current reuse and preparing for reuse services at every recycling centre in Scotland is required. Disabled peoples' organisations should be involved in the design of facilities for recycling, reuse and repair.

For further information:
Policy Paper for Scotland Circular Economy Bill, Circular Communities Scotland, May 2022, https://www.circularcommunities.scot/wp-content/uploads/2022/05/Scotlands-Circular-Economy-Bill-Policy-Paper.pdf

9.2.4 Incineration

Create a phase out plan for incinerators

Create a phase out plan for Scotland's incinerators.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

In 2019, the total quantity of waste incinerated in Scotland was 1.23 million tonnes across 24 permitted facilities. This was an increase of 0.52 million tonnes (72%) from 2018 and this total includes waste from all categories including household, wood, animal manure and rubber. During this same period 330,368 tonnes of household or similar waste was incinerated, an increase of 131% from 142,946 tonnes in 2018.

Under the Waste (Scotland) Regulations 2012, a ban on sending biodegradable municipal waste (BMW) to landfill is due to be introduced in 2025, after the Scottish Government announced in September 2019 that the ban would be delayed for a number of years. This delay has given local authorities across Scotland extra time to plan how they will divert their waste from landfill, but many see incineration as the solution.

Local authorities and waste companies plan to increase incineration capacity in Scotland by at least an extra one million tonnes. This means that by 2027 there will be more incineration capacity than there is waste to burn. Scotland currently has five working incinerators for household waste with a capacity of 788,000 tonnes per year.

There is a moratorium on building new incinerators, although some already in the pipeline will still be built. From Inverurie to Irvine, a further six incinerators are due to start operating in the next three years with the capacity to burn a further 1,056,000 tonnes of waste a year. There are at least four other incinerators under consideration.

Scotland currently generates 2.41 million tonnes of household waste a year and by 2023 we will have the facilities in Scotland to burn a yearly total of 1,844,000 tonnes of waste. This could lead to up to 77% of household waste being burned, well above the Scottish Government's target of incinerating only 14% of municipal waste by 2030 as set out in the 2003 National Waste Strategy.

The Scottish Government needs a plan to phase out the use of incineration entirely and a strong step in the right direction would be to ban plastics going to incinerators by 2025.

For further information:
Incineration resource page, FoE Scotland, 2023,
https://foe.scot/campaign/plastic-pollution/incineration/

10. Land use, land use change and forestry

Emissions from the land use, land use change and forestry (LULUCF) sector cover emissions and removals of greenhouse gases from changes in the carbon stock in forestland, cropland, grassland, wetlands, settlements and harvested wood products, and of other greenhouse gases from drainage and rewetting of soils, nitrogen mineralisation associated with loss and gain of soil organic matter, and fires.

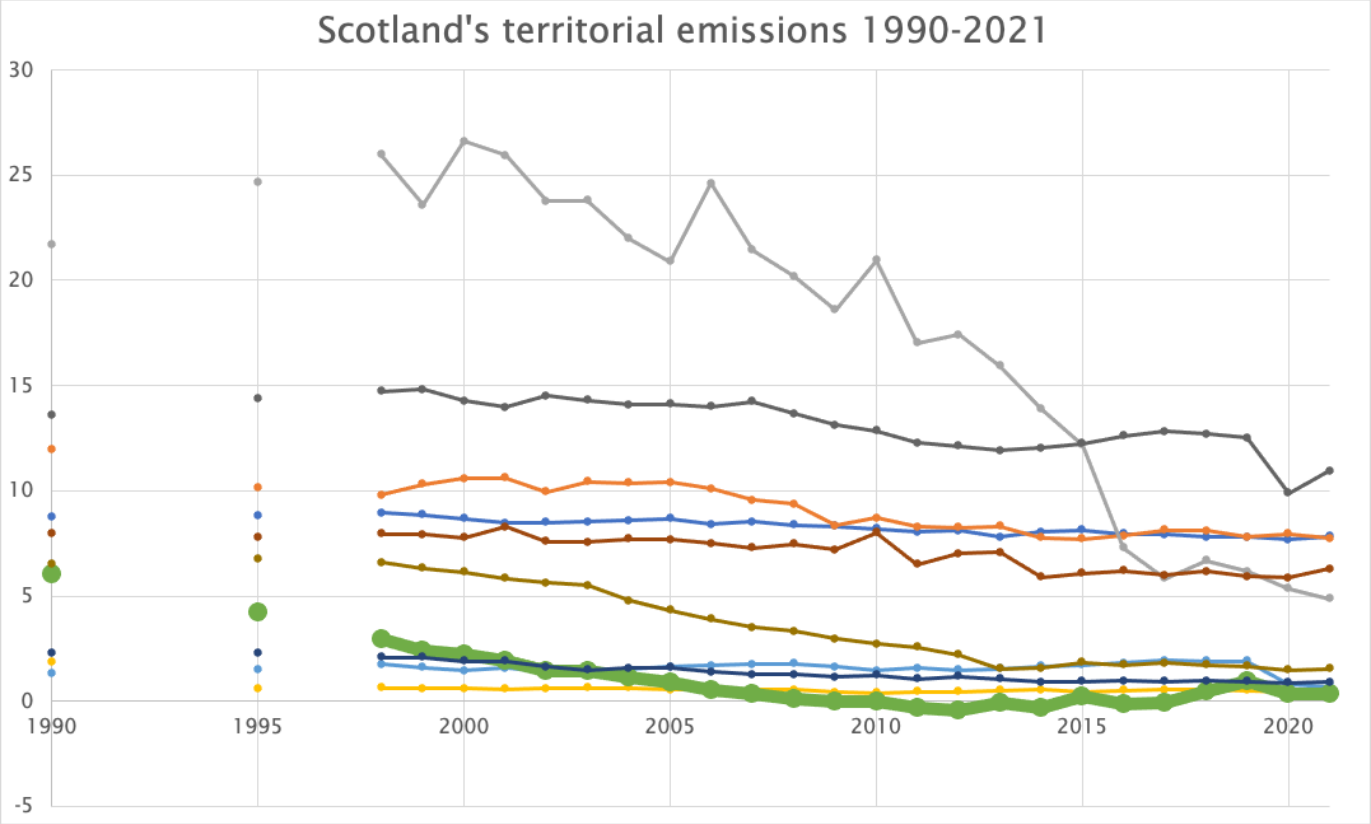

Figure 20: emissions in $MtCO_2e$ from the LULUCF sector 1990-2021, showing a fall of 94%.

Emissions in the LULUCF category are all about what is happening to the land of Scotland. Some of the land of Scotland is absorbing carbon, some of it is releasing it on a grand scale. The net figure of -0.5$MtCO_2e$ or 1.25% of our total 2020 emissions is very deceptive. As the figure below shows the actual emissions from LULUCF in 2020 were 12.4$MtCO_2e$, making it the highest emitting sector, with 20% more emissions than domestic transport. At the same time the land and vegetation of Scotland were also absorbing 11.9 $MtCO_2e$. Most of the emissions are due to changes in land use and damaged peatland, most of the removals are growing trees and healthy peatlands absorbing carbon. The science behind these figures is complex and subject to frequent revision, and some emissions and removals are not included in the figures. Nonetheless, what we do to the land of Scotland – positively and negatively – is vitally important in determining a large fraction of our overall emissions.

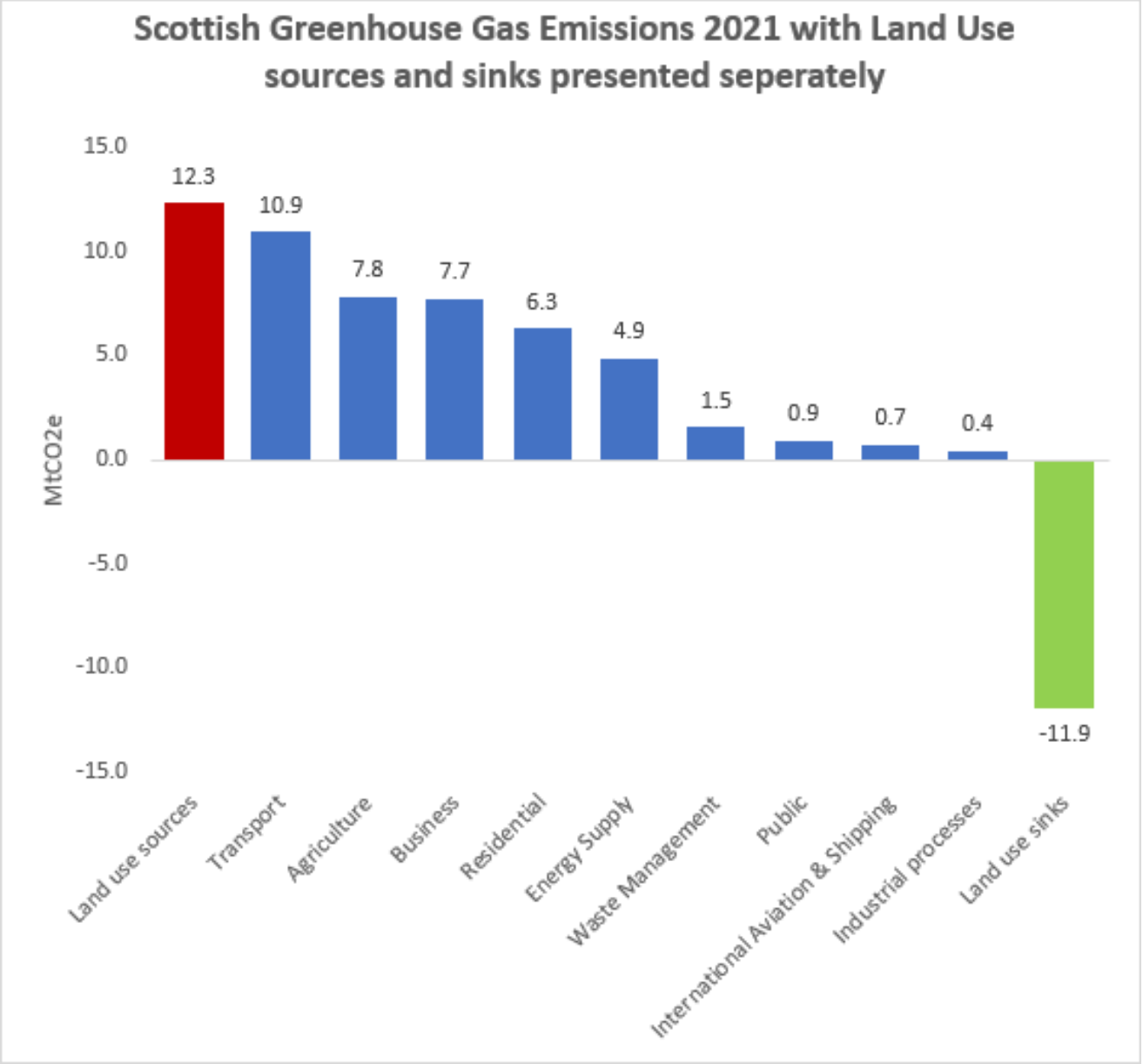

Figure 21: climate change emissions and removals by sector, 2021 figures in $MtCO_2e$, courtesy of Andrew Midgley of RSPB Scotland.

We have a lot of peaty soil in Scotland and that peat locks up a very large amount of carbon. There is nearly 25 times as much carbon locked up in Scotland's peaty soils as there is in all the trees and plants in the UK[243]. When peatlands are in good condition they form new peat and lock in carbon from the atmosphere. But when they are degraded they release carbon back into the atmosphere. Around 80% of Scotland's peaty soils are degraded in some way, mainly by drainage and overgrazing, but there are also increasing effects from the changing climate. So how we manage peatlands, and particularly how we try to help them recover, is vitally important at a local, national and global scale.

Much of Scotland's agricultural activity affects the carbon locked up in soils but the impact of that appears in this chapter rather than the Agriculture chapter.

243 https://www.nature.scot/sites/default/files/2019-04/Peatland%20Action%20-%20COMMS%20-%20Materials%20-%20LEAFLET%20-%20Carbon%20Facts%20and%20Figures%20leaflet%20screen%20-%20with%20full%20reference%20list%20-%202019%20UPDATE.pdf

How we use land can also have a big impact on climate risks – reducing or increasing risks from floods, fire, drought, and plant and animal diseases – and plays a key part in Scotland's overall resilience to the increasing risks that our changing climate is bringing.[244]

10.1 Current climate plan

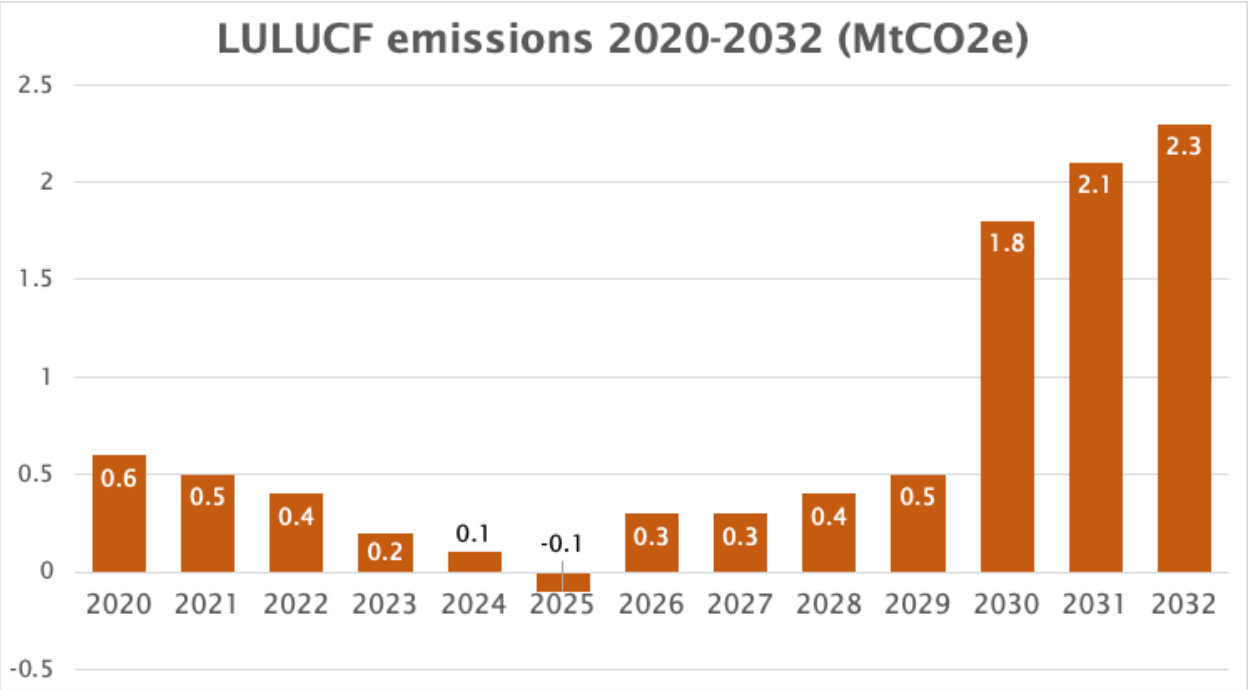

Figure 22: expected climate change emissions from LULUCF 2020-2023

The Climate Change Plan update lists four outcomes for the LULUCF sector along with policies and proposed policies which are supposed to deliver them.

Outcome 1: We will introduce a stepped increase in the annual woodland creation rates from 2020-2021 to enhance the contribution that trees make to reducing emissions through sequestering carbon
Outcome 2: Increase the use of sustainably sourced wood fibre to reduce emissions by encouraging the construction industry to increase its use of wood products where appropriate
Outcome 3: To enhance the contribution of peatland to carbon storage, we will support an increase in the annual rate of peatland Restoration
Outcome 4: We will establish pilot Regional Land Use partnerships (RLUPs) over the course of 2021

Emissions are predicted to decline to the middle of the decade but then increase, with emissions from the LULUCF sector representing around 13% of Scotland's expected total emissions in 2032.

10.2 Policies

10.2.1 Strategic approaches

Set up a Carbon Emissions Land Tax

A well-designed Carbon Emissions Land Tax would accelerate progress towards maximising carbon sequestration on large landholdings.

[244] NatureScot – soils, nature and the climate emergency, Clive Mitchell blog, 2022, https://soils.org.uk/blog/naturescot-soils-nature-and-the-climate-emergency/

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Scotland's land could be sequestering millions of tonnes of carbon a year more than it does at present. Despite incentives such as woodland and peatland restoration grants, our land is failing to deliver its immense potential to become a major carbon sink. By attaching a payment (a tax) to estimated net carbon emissions from the land, a Carbon Emissions Land Tax would compel large landowners, with holdings over 1,000 hectares, to take more seriously their responsibilities to support national and international climate targets.

Provided it is administered and collected by local councils, a Carbon Emissions Land Tax would be legally compatible with existing devolved powers. As a first step, it would require enabling legislation by the Scottish Parliament to give councils discretionary powers to introduce the tax at a local level.

Expected short-to-medium term revenues from the tax could assist the Just Transition by generating many millions of pounds for hard-pressed rural councils, which in turn could be used to help fund climate-related projects such as extensions of concessionary public transport; home insulation for social housing; community renewable start-ups; community woodland projects; and organic local food production and distribution.

Co-benefits include the creation of a range of technical, professional and manual jobs, particularly in Scotland's most sparsely populated areas. It would also contribute to nature protection by shifting land use away from damaging practices such as muirburn and overgrazing, which in turn would allow nature and biodiversity to flourish alongside restored peatlands and expanded woodlands.

The impact of the tax would take time to translate into carbon savings, but academic studies and Scottish Government research suggests that the areas of land that would be targeted by this tax have the potential to sequester, at a conservative estimate, upwards of 6 million tonnes of CO_2e annually by 2040, and around 600 million tonnes of CO_2e over the next 100 years.

A Carbon Emissions Land Tax could be included in the forthcoming Land Reform Bill (scheduled to be introduced by the end of 2023).

For further information:
Carbon Emissions Land Tax - Increasing carbon storage and wildlife on Scotland's land, John Muir Trust, 2023,
https://www.johnmuirtrust.org/support-us/take-action/982-carbon-emissions-land-tax

Cease soil carbon trading

The carbon in Scotland's agricultural soils should not be traded until further notice.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Given the agricultural soil carbon market's lack of maturity, farmers and land managers in Scotland should not be selling soil carbon sequestration to outside investors. There are risks of farmers reducing the value of their land and making it harder to sell if they have already sold their soil carbon rights. Also, selling those rights outwith Scottish agriculture means the credit does not appear either on the farm account (so the farm cannot claim, for example, to be 'carbon positive') or on the national account.

There should be a moratorium on trading in agricultural soil carbon in Scotland until a fair and credible scheme is in place. There should be a presumption that any soil carbon sequestration benefits should be retained within Scottish agriculture.

For further information:
Farming for 1.5: from here to 2045, 2021, https://www.farming1point5.org/reports
Scotland is on the global frontlines of The Great Net-Zero Land Grab, OpenDemocracy, 2021, https://www.opendemocracy.net/en/oureconomy/scotland-is-on-the-global-frontlines-of-the-great-net-zero-land-grab/
Soil Carbon and Land Use in Scotland, ClimateXchange, 2018, https://www.climatexchange.org.uk/media/3046/soil-carbon-and-land-use-in-scotland.pdf

10.2.2 Forests

Focus on management of native woodlands

The role of native woodland needs to be recognised more fully in long-term policy in terms of permanence and longevity; we need to focus on management of existing woodlands alongside expansion.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

Climate Change Plan forestry policies need to be balanced and reflect multiple objectives of forestry so they need to go beyond just woodland expansion and consider how woodland cover will be maintained in the long term.

Research used in Woodland Trust's 'State of Woods and Trees' report showed that ancient woodland can store 30% more carbon compared to the average for other woodland types - so longevity of woodland is an important factor in woodland policy and it is important to think of woodlands beyond 2045.

Recent research from Forest Research showed that different types of woodland have different carbon sequestration potential, with conifers shown to sequester most carbon short term but in the long-term native woodlands catch up significantly. To maximise resilience we need a diversity of species, age, size and silvicultural techniques.

Native woodlands also contribute to climate adaptations, for instance by slowing down water flow and preventing or reducing flooding.

Co-benefits include jobs associated with forestry and woodland management, as well as other operations such as tree nurseries, in addition to contributing to nature recovery and Just Transition in the land-use sector.

For further information:
Emergency Tree Plan for the UK, Woodland Trust, 2020, https://www.woodlandtrust.org.uk/publications/2020/01/emergency-tree-plan/
State of the UK's Woods and Trees 2021, Woodland Trust, https://www.woodlandtrust.org.uk/state-of-uk-woods-and-trees/?gclid=Cj0KCQjw27mhBhC9ARIsAIFsETGtCumS_zGI3t68fxDNRBRzlWgHl1Kon3RGSWEiVJZqEc12ARx6_J4aAkcnEALw_wcB

Expand native woodland

Create targets and greater funding for native woodland creation, including more investment in productive broadleaf woodland.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

To deliver the revised policy outcomes and policies, a clearer and greater level of support for native woodland expansion is necessary. Commercial forestry targets should include productive, native broadleaved species.

As well as overall woodland targets, the need for a greater focus on native woodlands should be demonstrated by minimum (as a proportion of total) targets for the creation and restoration of native woodlands. This would demonstrate the Government's understanding of the links between the climate and biodiversity emergencies and show that efforts to address the former will not exacerbate the latter.

For further information:
Emergency Tree Plan for the UK, Woodland Trust, 2020,
https://www.woodlandtrust.org.uk/publications/2020/01/emergency-tree-plan/

Assess forestry carbon and nature benefits

Forestry applications over 20 hectares should be required to specify the net carbon sequestration they will achieve over their lifespan, and demonstrate biodiversity net gain.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

The current system for afforestation is very much developer-led, with land owners approaching Forestry Scotland with proposals for approval and grant assistance. The current scheme is attractive to investors, with a combination of planting grants, maintenance of basic payments and favourable tax treatment of the timber crop.

New tree and woodland cover deployed on farms and crofts as part of a climate change mitigation plan must take account of the long-term storage of carbon and opt for species and uses that optimise this - and be sensitive to other priorities such as biodiversity, landscape, climate adaptation and community benefit.

Unwise planting of trees on peatlands can wipe out the supposed carbon benefits of the growing trees.[245]

Some tree-planting schemes may result in a net loss of biodiversity as there is currently no requirement to undertake a biodiversity assessment of the site for smaller schemes.

For further information:
Farming for 1.5: from here to 2045, 2021, https://www.farming1point5.org/reports

[245] Ecological Impacts of Forestry on Peatlands, IUCN UK Committee Pealtands Programme, 2014 https://www.iucn-uk-peatlandprogramme.org/sites/default/files/2019-05/4%20Forestry%20final%20-%205th%20November%202014.pdf

Boost the integration of trees on farms and croft

Scottish Government should incentivise the integration of trees on farms and crofts - also known as agroforestry - with a major investment of funding over the next decade.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Agroforestry done right - the right trees in the right places - provides an opportunity to sequester carbon, increase overall biomass production, maintain food production, enhance biodiversity, improve animal health and welfare, and generate profit. Agroforestry is an important land use which will help the land use sector meet its commitments on climate and nature, as well as enabling farms to adapt to climate change and continue to produce food in an economically and environmentally sustainable manner.

Scottish Government should invest at scale over 10 years in supporting high quality agroforestry until it becomes a widely used and understood aspect of Scottish farming. It should be a key element within Tier 2, supported by capital grants for establishment, a dedicated advisory team able to advise on integration of trees within the farm and ongoing research. The agroforestry budget and programme should be managed within agriculture rather than forestry, as it is primarily a way to farm better rather than a way to plant more trees.

There need to be appropriate safeguards against speculation with land using forestry grants and claiming carbon savings at the expense of small farmers and local communities. This could lead to depopulation of rural communities, escalating land values and a deepening of the rural housing crises.

For further information:
Integrating Trees on Farms and Crofts in Scotland - Benefits, Barriers and Opportunities, Woodland Trust Scotland and Soil Association Scotland, https://www.woodlandtrust.org.uk/media/51158/integrating-trees-on-farms-and-crofts-in-scotland.pdf
Farming for 1.5: from here to 2045, 2021, https://www.farming1point5.org/reports

Manage the nature and climate impacts of deer

Implement in full the recommendations of the Independent Deer Working Group[246] report through the introduction and implementation of new deer legislation.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The over abundance of deer is a serious problem for nature and, by preventing natural tree regeneration, for climate change. The Scottish Government should introduce policies, and preferably create new legislation, which:

1. Set statutory maximum limits for deer density on a regional basis, including a maximum of ten red deer per square kilometre density over large areas of open range in the Highlands.

[246] The management of wild deer in Scotland: Deer Working Group report, Scottish Government, 2020, https://www.gov.scot/publications/management-wild-deer-scotland/

2. Strengthen NatureScot's deer management powers, ensuring that they have sufficient, flexible enforcement powers to maintain deer populations at sustainable levels in every area of Scotland and to protect public interests. Mandatory deer count data and cull return systems administered by NatureScot are required to underpin this process.

3. The Scottish Government and Land Commission should integrate Deer Management Groups within the Regional Land Use Framework model so that deer management is framed within the context of other social, environmental and economic priorities.

4. Public financial support for deer fencing should be phased out. A cost-benefit analysis of delivering woodland expansion via natural regeneration and sustainable deer management, rather than by tree planting and deer fencing, should be undertaken and used to guide policy implementation.

For further information:

Saving Scotland's Rainforest: managing the impact of deer, Scottish Environment LINK, July 2023,
https://www.scotlink.org/publication/saving-scotlands-rainforest-managing-the-impact-of-deer/

10.2.3 Peatlands

Increase investment in peatland restoration

Increase investment in peatland restoration and set a peatland restoration target.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

The Scottish Government has committed £250m over the ten years 2020-30 for peatland restoration. So about £25m/yr and with an assumed cost of £1,000/ha that £25m could theoretically pay for approximately 25,000ha of restoration activity per year. Which suggests that the funding would possibly deliver around 250,000ha of total restoration by 2030. Yet we know that we have 1.9m ha of degraded peatland, so the government investment needs to be much greater.

At the same time, we know that while the Committee on Climate Change suggests that the government needs to restore 45,000ha/year, the government target is 20,000ha and that it is also failing to deliver that.

The Scottish Government should set a peatland restoration target of at least 45,000ha/yr, aiming to increase this over time, and significantly increase the funding available through existing schemes.

As well as higher ambition in terms of area restored, much higher levels of funding are required. Co-benefits include creating jobs and protecting nature.

For further information:
Transformational peatland strategy needed to tackle Scotland's nature and climate crisis, RSPB Scotland, 2020,
https://www.rspb.org.uk/about-the-rspb/about-us/media-centre/press-releases/transformational-peatland-strategy-needed-to-tackle-scotlands-nature-and-climate-crisis/

Introduce peatland restoration obligations on land owners

Make peatland restoration a requirement on land managers receiving public money.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

The Scottish Government and Scottish Land Commission have developed the Land Rights and Responsibilities Statement and protocols relating to good land management,[247] so the expectation that land will be managed sustainably is increasing, but these mechanisms do not have real teeth as yet.

One way of making that expectation more real would be to require land managers in receipt of public money to ensure that they are managing their land sustainably. Given that peatlands cover about 20% of the land and that the vast majority of that is degraded in some way, managing the land of Scotland sustainably must involve changing the management of peatlands and restoring them. If someone is in receipt of public money and has areas of peat, they should be required to be managing that peat sympathetically.

For further information:
Transformational peatland strategy needed to tackle Scotland's nature and climate crisis, RSPB Scotland, 2020,
https://www.rspb.org.uk/about-the-rspb/about-us/media-centre/press-releases/transformational-peatland-strategy-needed-to-tackle-scotlands-nature-and-climate-crisis/
See also the 'Carbon Emissions Land Tax' policy in this chapter.

Ban muirburn on peat

Introduce a ban on burning on peatlands.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Since the land of Scotland is currently a very significant source of emissions, in order to meet Scotland's emission reduction targets it is vital that changes - including to muirburn - are made to current land use and land management. The status quo is not an option.

Muirburn is a well-established practice that takes place across a range of soil types, but the risks to our carbon stocks is too great to allow this practice to continue over peatlands. Not only is there a risk that a vegetation fire could get into the peat itself but burning can also damage peatlands and we know that degraded peatlands are net sources of peat loss and greenhouse gases. Muirburn and wildfires also make a significant contribution to local and regional air quality problems.[248]

Muirburn is regulated under the Hill Farming Act 1946 (as amended) and this legislation sets out the burning season and associated rules, the contravention of which constitutes an offence. Burning on peatland is not an offence and does take place. Research published in 2015 mapped burning across c.45,000km^2 of the UK and found that a third of the burned areas in Scotland and England were on peat of 50cm or deeper.[249]

[247] Scottish Land Rights and Responsibilities Statement 2022, Scottish Government, https://www.gov.scot/publications/scottish-land-rights-responsibilities-statement-2022/pages/2/

[248] Effects of net zero policies and climate change on air quality, the Royal Society, 2021, https://royalsociety.org/topics-policy/projects/air-quality-climate-change/

[249] Douglas D.J.T., Buchanan G.M., Thompson P., Amar A., Fielding D.A., Redpath S.M., Wilson J.D., (2015) Vegetation burning for game management in the UK uplands is increasing and overlaps spatially with soil carbon and protected areas, Biological Conservation, 191, 243-250.

The NatureScot evidence review on the impacts of muirburn on wildfire prevention, carbon storage and biodiversity[250] concluded that '*there is evidence that muirburn directly causes a proportion of wildfires that occur, however there remains uncertainty regarding this proportion.'* Given that muirburn can be a cause of wildfire, better regulation as a means of reducing wildfire risk is important. With the incidence and severity of wildfires expected to increase in coming years due to climate change[251] we should be doing all we can to minimise the risk of wildfires.

The IUCN Peatland Programme takes the view that there is consensus, based on the current body of scientific evidence, that burning on peatland (especially blanket bog and wet heath) can result in damage to peatland species, microtopography and wider peatland habitat, peat soils and peatland ecosystem functions[252] - further reducing their sequestration capacity and turning them into sources of greenhouse gas emissions. They highlight that healthy peatlands do not require burning for their maintenance.

At present, the Muirburn Code states that burning should not take place on peatlands (taken to be areas of peat deeper than 50cm), but there is no regulatory means of preventing this practice given that the Code is advisory. As such, a stronger regulatory framework is required to actively prevent burning on peatlands.

The draft Wildlife Management and Muirburn (Scotland) Bill extends the licensing of muirburn to cover any time of year and any location.[253] This is potentially a useful step forward, but SCCS believes that any new regulatory framework for muirburn must also include an outright prohibition of burning on peatlands.

This would require legislation to be amended and an offence to be created with an appropriate penalty – with the definition of "peatlands" also being tightened from "peat deeper than 50cm" to one of 30cm or lower. This step has also been suggested by the government's own advisory body, the Committee on Climate Change.

For further information:
SCCS response to Wildlife Management and Muirburn Bill stage 1 evidence, SCCS, 2023, https://docs.google.com/document/d/1RI6AWC6loFNIuUGqwn7XrPAYsnli8CQhqd-u7OGrCxw/edit
Muirburning for grouse: does it increase or decrease net carbon emissions?, Revive, 2022, https://revive.scot/publication/1610/

Ban horticultural peat extraction and sale

Ban commercial peat extraction for horticulture and the sale of peat for horticultural use.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

[250] NatureScot Research Report 1302 - Reviewing, assessing and critiquing the evidence base on the impacts of muirburn on wildfire prevention, carbon storage and biodiversity, NatureScot, 2022, https://www.nature.scot/doc/naturescot-research-report-1302-reviewing-assessing-and-critiquing-evidence-base-impacts-muirburn

[251] Fire Danger Rating System home page, 2023, https://www.scottishfiredangerratingsystem.co.uk/project/overview

[252] Position Statement: Burning and peatlands, IUCN Peatlands Programme, 2020, https://www.iucn-uk-peatlandprogramme.org/sites/default/files/header-images/Resources/IUCN%20UK%20PP%20Burning%20and%20Peatlands%20Position%20Paper%202020%20Update.pdf

[253] Wildlife Management and Muirburn (Scotland) Bill - Explanatory Notes, Scottish Parliament, 2023, https://www.parliament.scot/-/media/files/legislation/bills/s6-bills/wildlife-management-and-muirburn-scotland-bill/introduced/accessible-explanatory-notes.pdf

The Scottish Government recognises the importance of peatlands and is funding restoration to help reduce emissions yet at the same time commercial extraction of peat continues. The Scottish Government has consulted on ending commercial peat sales[254] and SCCS supports the proposals to phase out the sale (and use) of peat for horticulture. The Government has also written to local authorities to ensure that they are aware of and exercise their powers in relation to the review of old mineral permissions and that it is actively seeking to get a comprehensive understanding of the location and scale of existing planning permissions for peat extraction.

Encouraging a voluntary move away from peat use in horticulture has failed, so there is a need to go further, faster. SCCS calls on the government to implement a phase out as speedily as possible, and before the end of 2024 at the latest.

A simple ban on peat extraction in Scotland could result in import substitution from Ireland or elsewhere. Consequently, a ban on the sale of peat would also be required.

Coordination with the other countries in the UK would, of course, be necessary but there are already proposals for bans in both England and Wales. The Committee on Climate Change — the government's own advisory body — has called for this measure.

For further information:
Consultation on Ending the sale of Peat in Scotland, SCCS, March 2023,
https://docs.google.com/document/d/1bBbCEv8plqfJ3IbuOAoFjJMueD_CxwIa_QiISI-pcwo/edit

Avoid developments on peatland

Reduce loss of peatland through development and maintain an overview of any losses.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Peatland is lost as a result of a range of developments that require planning consent, such as renewable energy projects, residential housing and road projects. Developers should be required to avoid siting development on sensitive peatlands and on deep peat in the first instance and where losses are unavoidable restoration opportunities should be maximised.

It is also important that a clear understanding of any losses is achieved. It is potentially misleading to claim benefits for gains through restoration when the direct loss of peatland or degradation of condition as a result of built development is not currently accounted for. Scottish Government, ideally via a single agency, should require developers to robustly assess any losses on their sites and maintain an overview of these.

For further information:
Peatland damage, IUCN UK Peatland Programme, 2023,
https://www.iucn-uk-peatlandprogramme.org/about-peatlands/peatland-damage

[254] Ending the sale of peat: consultation, Scottish Government, February 2023, https://www.gov.scot/publications/ending-sale-peat-scotland-consultation/#:~:text=We%20are%20consulting%20on%20ending,of%20our%20Climate%20Change%20Plan & SCCS response, May 2023, https://www.stopclimatechaos.scot/wp-content/uploads/2023/05/SCCS-response-to-consultation-on-Peat-sales.pdf

11. Agriculture

Emissions from the Agriculture Sector cover emissions from livestock, agricultural soils, stationary combustion sources and off-road machinery. Agriculture produces almost a fifth of Scotland's greenhouse gas emissions. More than 70% of the emissions counted under the agriculture category are to do with rearing livestock.

Emissions fell 11% between 1990 and 2021 primarily due to a reduction in livestock numbers in the early part of that period. Some of the impacts of agriculture on land-use emissions and that of agroforestry appear in the Land Use, Land-use Change and Forestry chapter.

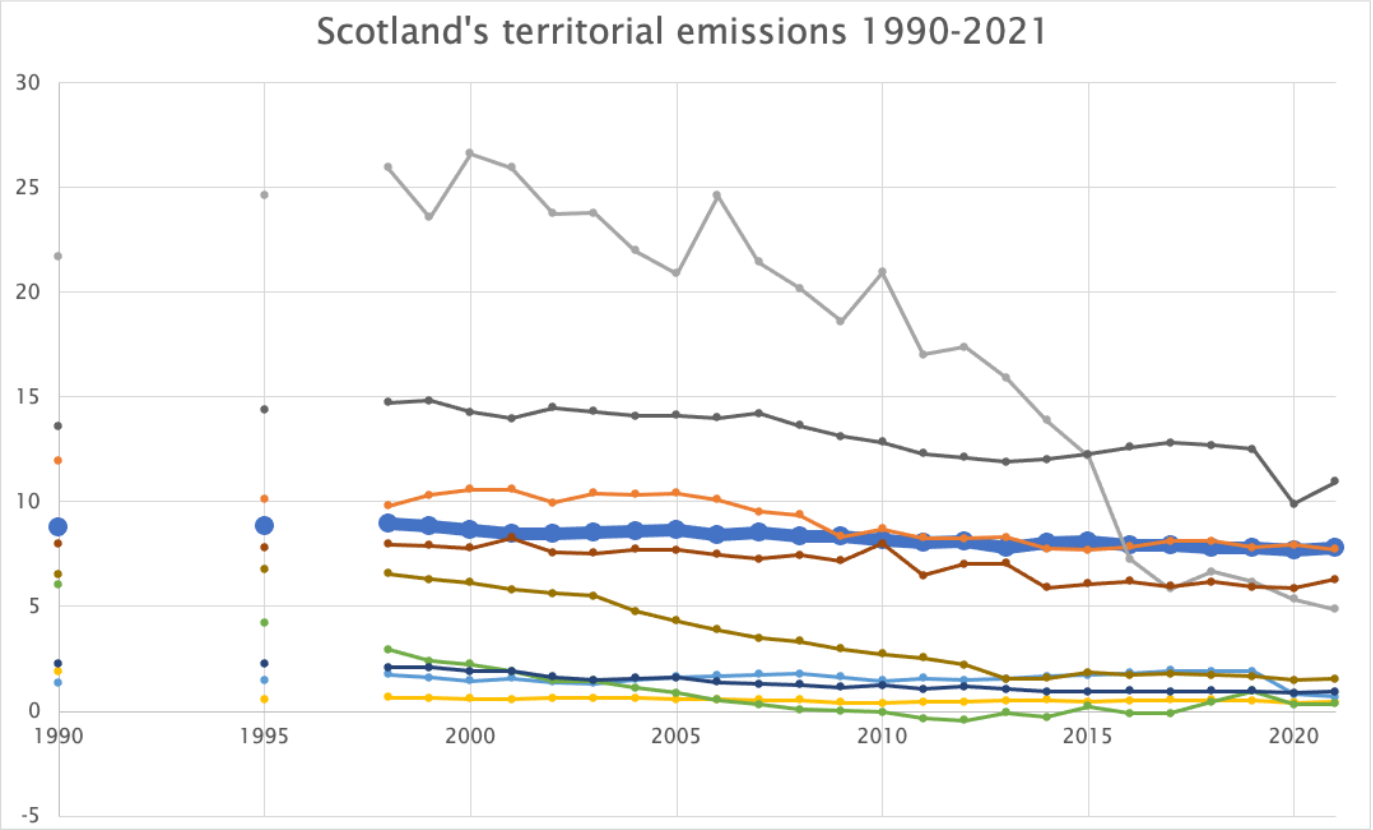

Figure 23: emissions in $MtCO_2e$ from the agriculture sector 1990-2021, showing a fall of 11%.

The Climate Change Committee recommends that agricultural emissions across the UK need to reduce by 34% by 2035 (from 2019 levels).[255] The proposals for the Agriculture Bill[256] translate this into a 31% reduction by 2032, to match the timescale of the current Climate Change Plan and promise proposals for a whole-farm emissions accounting approach in the draft of the next Plan in late 2023.

Around £600 million a year is spent in Scotland on agricultural support, and many farm businesses would not survive without public funding, so public policy has a huge influence over what farming looks like. In 2019 less than 10% of this subsidy was allocated to measures specifically designed to reduce emissions or increase biodiversity.

The Agriculture Bill represents the perfect opportunity to realign policy for a sector which is responsible for nearly a fifth of Scottish emissions, and to encourage climate and

[255] 2022 Progress Report to Parliament, Climate Change Committee, June 2022, https://www.theccc.org.uk/publication/2022-progress-report-to-parliament/

[256] Delivering our Vision for Scottish Agriculture - Proposals for a new Agriculture Bill, Scottish Government, August 2022, https://www.gov.scot/binaries/content/documents/govscot/publications/consultation-paper/2022/08/delivering-vision-scottish-agriculture-proposals-new-agriculture-bill/documents/delivering-vision-scottish-agriculture-proposals-new-agriculture-bill/delivering-vision-scottish-agriculture-proposals-new-agriculture-bill/govscot%3Adocument/delivering-vision-scottish-agriculture-proposals-new-agriculture-bill.pdf

nature-friendly farming. If agriculture and land use fail to reach their respective targets, Scotland will fail to reach its national targets too.

The proposals for the Agriculture Bill include payments to farmers, crofters and land managers to support delivery of national climate change emission reduction objectives, to support delivery of national climate change adaptation objectives, and to support integrated land management, such as for peatland and woodland outcomes on agricultural holdings. Some payment will be conditional on outcomes that deliver on climate change.

Farming is the least diverse sector in the UK when it comes to ethnic diversity.[257] Any new job creation in the sector should actively aim to tackle racial inequality.

Some policies below come from the Farming for 1.5° group - an independent inquiry on farming and climate change in Scotland, co-ordinated by NFU Scotland and Nourish Scotland.[258] It involved a panel of farmers, NGOs and scientists, and the main report in 2021 looked at pathways to 2032 and then to 2045.

11.1 Current climate plan

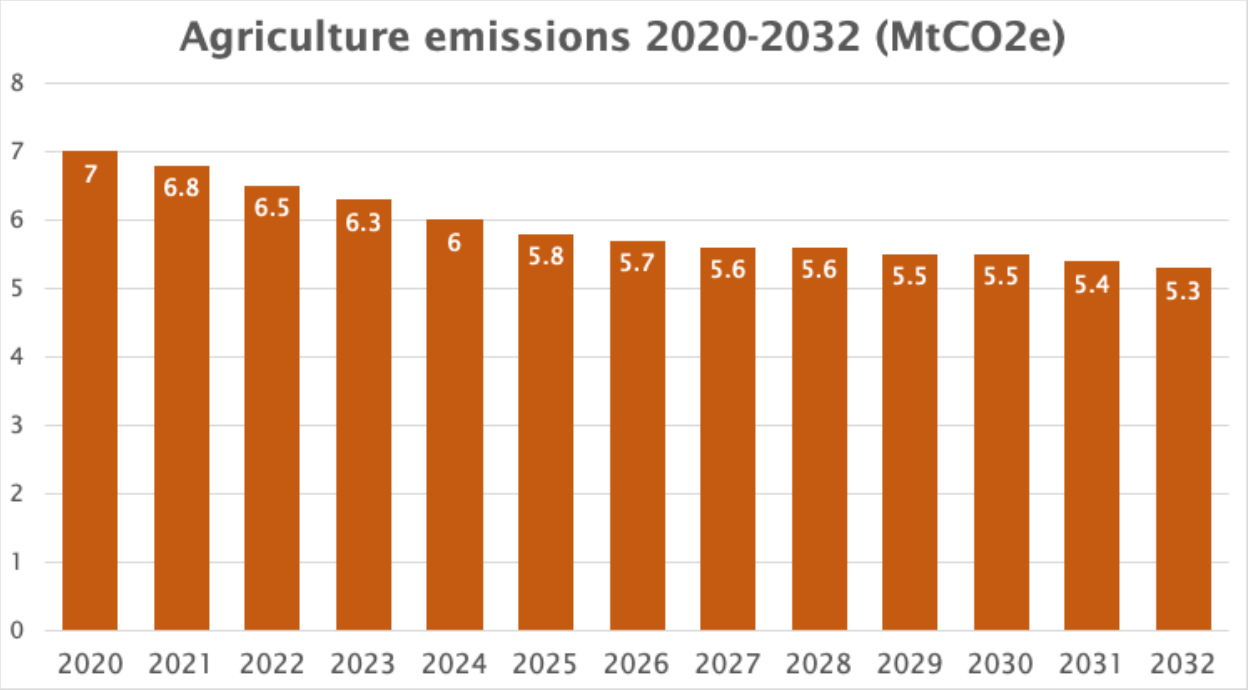

Figure 24: expected climate change emissions from agriculture 2020-2023

The Climate Change Plan update lists six outcomes in agriculture, along with the policies and proposed policies supposed to deliver them.

Outcome 1: A more productive, sustainable agriculture sector that significantly contributes towards delivering Scotland's climate change, and wider environmental, outcomes through an increased uptake of climate mitigation measures by farmers, crofters, land managers and other primary food producers
Outcome 2: More farmers, crofters, land managers and other primary food producers are aware of the benefits and practicalities of cost effective climate mitigation measures
Outcome 3: Nitrogen emissions, including from nitrogen fertiliser, will have fallen through a combination of improved understanding, efficiencies and improved soil condition
Outcome 4: Reduced emissions from red meat and dairy through improved emissions intensity

[257] The two sides of diversity - which are the most ethnically diverse occupations?, Policy Exchange, 2017, https://policyexchange.org.uk/wp-content/uploads/2017/03/The-two-sides-of-diversity-2.pdf

[258] Farming for 1.5: from here to 2045, 2021, https://www.farming1point5.org/reports

Outcome 5: Reduced emissions from the use and storage of manure and slurry
Outcome 6: Carbon sequestration and existing carbon stores on agricultural land have helped to increase and maintain our carbon sink

11.2 Policies

11.2.1 Strategic approaches

Reform farming funding

Increase the proportion of funding that goes toward nature- and climate-friendly farming.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Agriculture is the largest use of land in Scotland, with around three-quarters of our land being farmed. Currently, less than 10% of public funding given to the industry pays for farming methods that support nature and tackle climate change. This must change. If we can transform how we farm, we can secure big wins for our wildlife and our climate emissions, while continuing to produce healthy food and provide rural jobs.

A major report produced by the RSPB, 'A world richer in nature', identified four specific actions for Scotland:

- maintain the current level of public funding for farming but ensure most is spent on supporting land management and farming methods that are nature-friendly and reduce greenhouse gas emissions
- increase the amount of funding spent on advice, knowledge transfer and training
- increase the area of organic land from 2% to 10% by 2030
- implement food system change through the Good Food Nation Act (2022) to support the transition toward more nature-friendly forms of agriculture

The Agriculture Bill is an opportunity to ensure farming policy is reformed and the more than half a billion pounds of farming subsidy handed out each year helps nature and our climate. The Agriculture Bill should include a "purpose clause" that places a duty on Ministers to ensure that all their actions related to agriculture (schemes, payments, etc) contribute to meeting emissions' reduction targets and adaptation goals.

The Scottish Environment LINK farming campaign[259] calls for at least three quarters of public spending on farming to support actions that restore nature and tackle climate change.

This policy would secure jobs in the rural economy by ensuring farming has a sustainable future.

For further information:
Farm for Scotland's Future, Scottish Environment LINK, 2022, https://farmforscotlandsfuture.scot
A world richer in nature, where nature and people can thrive - getting nature positive in the UK by 2030, RSPB, 2023, https://www.rspb.org.uk/globalassets/downloads/documents/decade-of-action-report-final.pdf

[259] Farm for Scotland's Future campaign page, Scottish Environment LINK, 2022, https://farmforscotlandsfuture.scot/

11.2.1 Direct emissions reductions

Reduce emissions from ruminant livestock

Scottish Government, farmers and research institutes should work together to accelerate advances in ruminant livestock selection and breeding; include reducing methane emissions in breeding goals, and encourage uptake of best practice.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Two innovations – effective feed additives and low methane breeding strategies – offer to weaken the link between methane emissions and current levels of production of meat and milk from ruminants.

Cows and sheep produce methane as part of a digestive system which allows them to turn human-inedible grass and by-products into milk, beef and lamb. This digestive system contains a huge diversity of micro-organisms.

Because methane is a much more powerful greenhouse gas than CO_2 this accounts for around 3.7MtCO_2e of emissions – about half of the total agricultural emissions in Scotland.

Some individual cows and sheep have a population of micro-organisms which produce much less methane than others because they produce less surplus hydrogen for the methane-producing bacteria to use. This is not a difference between breeds but between individual animals. Researchers have now found a reliable and practical way to analyse a sample of rumen microbes from live cattle to predict that animal's methane performance.[260]

Much of this difference is passed on to calves and lambs, opening up the possibility of breeding low-methane animals. This is already starting to happen with sheep breeding in New Zealand and with cattle breeding in the Netherlands.

By 2045 a reduction of 50% on current levels is possible through low-methane breeding and widespread adoption of feed additives. There is a possible future for sustainable high welfare, low opportunity cost ruminant livestock systems using grass and by-products to produce human edible protein, while enhancing biodiversity and soil carbon sequestration.

For further information:
Farming for 1.5: from here to 2045, 2021, https://www.farming1point5.org/reports

Set a target to for nitrous oxide reductions in farming

Scottish Government should set a target of a 25% nitrous oxide reduction from farming by 2032 through a combination of more efficient use of bagged nitrogen, manures and slurries, an increase in the use of legumes, cover crops and intercropping, and the reduction of nitrogen use in the large areas of land being farmed for nature.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

[260] Friggens, NL, Hester, et al. (2020) Tree planting in organic soils does not result in net carbon sequestration on decadal timescales. Glob Change Biol.; 26: 5178– 5188. https://doi.org/10.1111/ gcb.15229

Nitrous oxide is an important greenhouse gas, and is about 300 times more powerful than carbon dioxide. Most nitrous oxide emissions from agriculture come from the interaction between reactive nitrogen and soil, with some coming from the way we store and handle animal manure and slurry. Currently more than half of bagged nitrogen is used on grassland. Better use of clover and more diverse leys can reduce the need for added nitrogen while improving soil and animal health.

Nutrient budgeting, yield mapping, crop monitoring, controlled release fertilisers and variable rate application all contribute to nitrogen use efficiency. Further uptake of these measures are expected to result in a cumulative reduction of 50% in nitrous oxide emissions by 2045.

A Nitrogen Levy, as proposed in our 'Finance Climate Justice' report, could add an extra incentive to reduce nitrogen use.[261]

There are other benefits. Better management of nitrogen in farming also leads to reduced ammonia emissions, which means less local ozone and fine particle air pollution, and less reactive nitrogen deposited with rain onto natural systems.[262]

For further information:
Farming for 1.5: from here to 2045, 2021, https://www.farming1point5.org/reports
Soil Carbon and Land Use in Scotland, ClimateXchange, 2018,
https://www.climatexchange.org.uk/media/3046/soil-carbon-and-land-use-in-scotland.pdf

Manage slurry storage better

Establish a requirement that all new slurry stores should be covered from 2024, with all slurry stores covered from 2027.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

38% of slurry storage is not covered in Scotland and therefore losing valuable resources to the atmosphere as well as contributing to agriculture's climate emissions. The Scottish Government should regulate so that newly installed slurry storage must include a cover.

It should be expected that the number of new slurry stores being installed in any one year will relate to a very small proportion of total emissions from slurry storage in Scotland. The main gain in reducing emissions would be achieved in ensuring that all existing stores are covered. In some instances, this will be difficult, meaning that greater capital investment would be required in replacement, but if a clear expectation is established with sufficient time for implementation, it should be possible to reduce emissions from this source.

There are new General Binding Rules on Silage and Slurry but covers for slurry storage are not required by these rules.[263]

Similar measures are already planned in England, meaning that Scottish farmers would not be being asked to do something that was not already accepted elsewhere. This measure also has

[261] Financing Climate Justice - fiscal measures for climate action in a time of crisis, p.68, Stop Climate Chaos Scotland, 2022, https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

[262] Effects of net zero policies and climate change on air quality, the Royal Society, 2021, https://royalsociety.org/topics-policy/projects/air-quality-climate-change/

[263] New General Binding Rules on Silage & Slurry - What's changed?, Farming and Water Scotland, 2022, https://www.farmingandwaterscotland.org/know-the-rules/new-general-binding-rules-on-silage-and-slurry-whats-changed/

benefits in relation to reducing agricultural ammonia emissions, which contribute to local and regional air quality problems.[264]

For further information:
Marginal abatement cost curve for Scottish agriculture, ClimateXchange, 2020, https://www.climatexchange.org.uk/media/4612/cxc-marginal-abatement-cost-curve-for-scottish-agriculture-august-2020.pdf

Increase organic farming

The Scottish Government should set a target of at least 10% of land to be farmed organically by 2030.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Organic farming generates fewer emissions per hectare (and in many cases fewer emissions per kg of product) while having proven benefits for soil carbon and biodiversity. Organic certification also requires a high standard of animal welfare. Farmers usually receive a premium for organic produce, and the organic market is growing within the UK and globally.

The EU has set a target of 25% of land to be farmed organically by 2030. The Bute House agreement already calls for the organic farmed area in Scotland to at least double by 2026. However, even if this is achieved it will only mean Scotland has 4% of land farmed organically.

As well as investing in conversion and maintenance payments and specialist advice, the Scottish Government should boost the domestic organic market through an ambitious target for organic food in public procurement and invest more heavily in organic farming research and training. These measures should be part of a national Organic Action Plan.

For further information:
Scottish Organic Stakeholders Group, https://organicstakeholders.scot
EU organic action plan, https://agriculture.ec.europa.eu/farming/organic-farming/organic-action-plan_en#:~:text=The%20Commission%20has%20set%20out,under%20organic%20farming%20by%202030.

Increase carbon content of soils

Set a target date to halt the loss of soil carbon, and establish a target to increase soil carbon.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

Soils can store carbon. The Climate Change Plan does not focus on boosting the carbon content of Scotland's farmed soils despite Soil Organic Carbon in arable and horticultural soils declining by 9.3% between 1998 and 2007.[265] Despite this there is no policy in place to start to reduce these losses and ultimately increase soil carbon levels. There are several measures appropriate for Scottish farming that can be implemented to increase soil carbon including not

[264] Effects of net zero policies and climate change on air quality, the Royal Society, 2021, https://royalsociety.org/topics-policy/projects/air-quality-climate-change/

[265] UKCCRA - 9.3% is a statistically significant decline (from 35.6g/kg to 32.3 g/kg); https://www.theccc.org.uk/wp-content/uploads/2016/07/UK-CCRA-2017-Scotland-National-Summary.pdf

leaving soil bare , nourishing the soils with manure and compost, and planting trees and legumes.

Recent research suggests that while there is the potential to increase soil carbon, it is very easy to lose it through management practices that damage the soil, thus suggesting that the focus should be on protecting soil carbon stocks. Nevertheless, specifically setting out to increase soil carbon would represent a positive step and encompass the protection of soil carbon stocks. A modest target to increase sequestration in soils would require research to identify the current position, establishing a monitoring regime to allow an assessment of progress, and a set of policies to encourage management to improve soil carbon.

For further information:
Soil Carbon and Land Use in Scotland, ClimateXchange, 2018,
https://www.climatexchange.org.uk/media/3046/soil-carbon-and-land-use-in-scotland.pdf

11.2.2 Just Transition in farming

Develop carbon skills for farmers

The new contract for agricultural advisory services should involve a re-focusing of the service on working with farmers to tackle the climate and nature emergencies; and an emphasis on reaching the full diversity of farmers through flexible and inclusive 'one to few' approaches.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The Scottish Government should publish comprehensive plans to realign and upscale the provision of accessible advice and skills development to farmers and crofters to a £20 million a year service. All farmers and crofters should receive the advice they need to transition to climate- and nature-friendly farming, respond to investment opportunities and to deliver sustainable economic and environmental outcomes.

Universal and consistent learning for all farmers, old and new, is fundamental in helping them develop an understanding of climate change and its solutions (for instance, the Climate Solutions course developed by RSGS). Formal education providers for new farmers in Scotland must therefore embed such green skills and knowledge into their provision, dynamically enhancing learning to align with the fast-changing nature of rural land use and financial support systems, and highlighting the positive green career pathways available in Scottish agriculture.

Farming is one of the few professions where there is no formal requirement for continuing professional development, yet existing farmers represent a crucial community through which climate and nature goals can be achieved, and where the technologies and practices required to deliver on these goals are often new and emerging. CPD for farmers must be relevant, accessible, flexible and timely.

Farmers in receipt of public support should be expected to undertake a proportionate level of CPD. Such capacity building can be supported by formal education pathways, such as college and university modular courses, as well as via industry and government-led provision. Ideally it would combine these, to ensure timely and context-appropriate knowledge and capacity building that aligns with changing rural support systems, technical and practical innovations, and a consistently high standard of delivery.

This learning should in turn be supplemented by an effective advisory service. The current advisory service is not adequate for the task of supporting the industry transformation needed and must be redesigned and resourced commensurately.

For further information:
Farming for 1.5: from here to 2045, 2021, https://www.farming1point5.org/reports
Unlocking Scotland's response to the climate emergency: 4 immediate actions to fast-track delivery for the Scottish Government, Climate Emergency Response Group, August 2022, https://cerg.scot/wp-content/uploads/2022/09/CERG-Main-Report-2022-Updated-080922.pdf
Agroecology: facilitating mindset change, Nourish Scotland, 2022, https://www.nourishscotland.org/wp-content/uploads/2022/07/Report-Agroecology-facilitating-Mindset-Change-partnership-project.pdf
Preparing for future AKIS in Europe, European Commission, 2019, https://scar-europe.org/images/AKIS/Documents/report-preparing-for-future-akis-in-europe_en.pdf

11.2.3 Food policy

Transition to lower carbon diets

The Scottish Government should advocate for a reduction in red meat and dairy consumption.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The Scottish Government should develop Sustainable Dietary Guidelines similar to those currently being developed in many European countries; with a significant commitment to rethink policy initiatives to support delivery of these guidelines.

The Committee on Climate Change envisaged that Scotland can get to net zero, but a big part of that is reduced emissions from agriculture which involves a shift in the nature of Scottish food production away from red meat and dairy. The Drawdown Project ranks moving to plant-based diets as one of the top two most-effective climate solutions, with a potential to reduce global emissions by around 90,000MtCO_2 over the next 30 years.[266]

Current diets, high in meat and dairy produce, are also high carbon. The Climate Change Committee has said that *"there should also be a clear plan to move to healthy and low-carbon diets."*[267] It has previously recommended a 20% reduction in meat and dairy consumption by 2030 and a 35% reduction for meat by 2050.[268] The debate about diets and livestock is usually characterised as being about reducing overall livestock numbers and concentrating on producing high quality meat and dairy produce.

Changes in diet are strongly linked to human health, employment in agriculture and social justice, and all of these considerations must be built into the transition to lower-carbon diets.

For further information:
Scientific Guidelines for healthy and sustainable diets, WWF, June 2023, https://www.wwf.org.uk/sites/default/files/2023-05/Eating_For_Net_Zero_Full_Report.pdf

[266] The Drawdown Project, 2023, https://drawdown.org/solutions/table-of-solutions
[267] Progress reducing emissions in Scotland – 2021 Report to Parliament, Climate Change Committee, 2021, https://www.theccc.org.uk/publication/progress-reducing-emissions-in-scotland-2021-report-to-parliament/
[268] Government's Food Strategy 'a missed opportunity' for the climate, Climate Change Committee, 2022, https://www.theccc.org.uk/2022/06/13/governments-food-strategy-a-missed-opportunity-for-the-climate/

Financing Climate Justice, SCCS, 2022,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

Set climate and nature commitments in the Good Food Nation Plan

Develop clear targets on reducing the Scottish diet's climate and environmental footprint, through the Good Food Nation Plan process.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The Scottish Government is currently developing its Good Food Nation Plan. This will be a blueprint for future local and business Good Food Plans.

The Scottish Government must develop clear targets and indicators on reducing the Scottish diet's climate and environmental footprint (currently the highest among UK nations, according to an upcoming WWF UK report), if the food systems' green transition is to be at the forefront of the upcoming plans.

For further information:
Agenda: We need to change the way we farm, Herald, April 2023,
https://www.heraldscotland.com/politics/viewpoint/23470341.agenda-need-change-way-farm/
See also sustainable fisheries policies in the Marine chapter.

12. Public sector

Due to the various policy and delivery responsibilities of local government and its cross-sectoral partners, including the NHS, their role in contributing to Scotland reaching (or not) our climate targets is vital. They also set a very visible public example of pro-climate or anti-climate activity. Ideally, the public sector should be leading by example.

The key areas where local government are a key policy or delivery lead or partner include:

- transport
- planning
- buildings and energy
- education

Local authorities and some other public bodies, like NHS Scotland and Scottish Water, are also very major energy users.

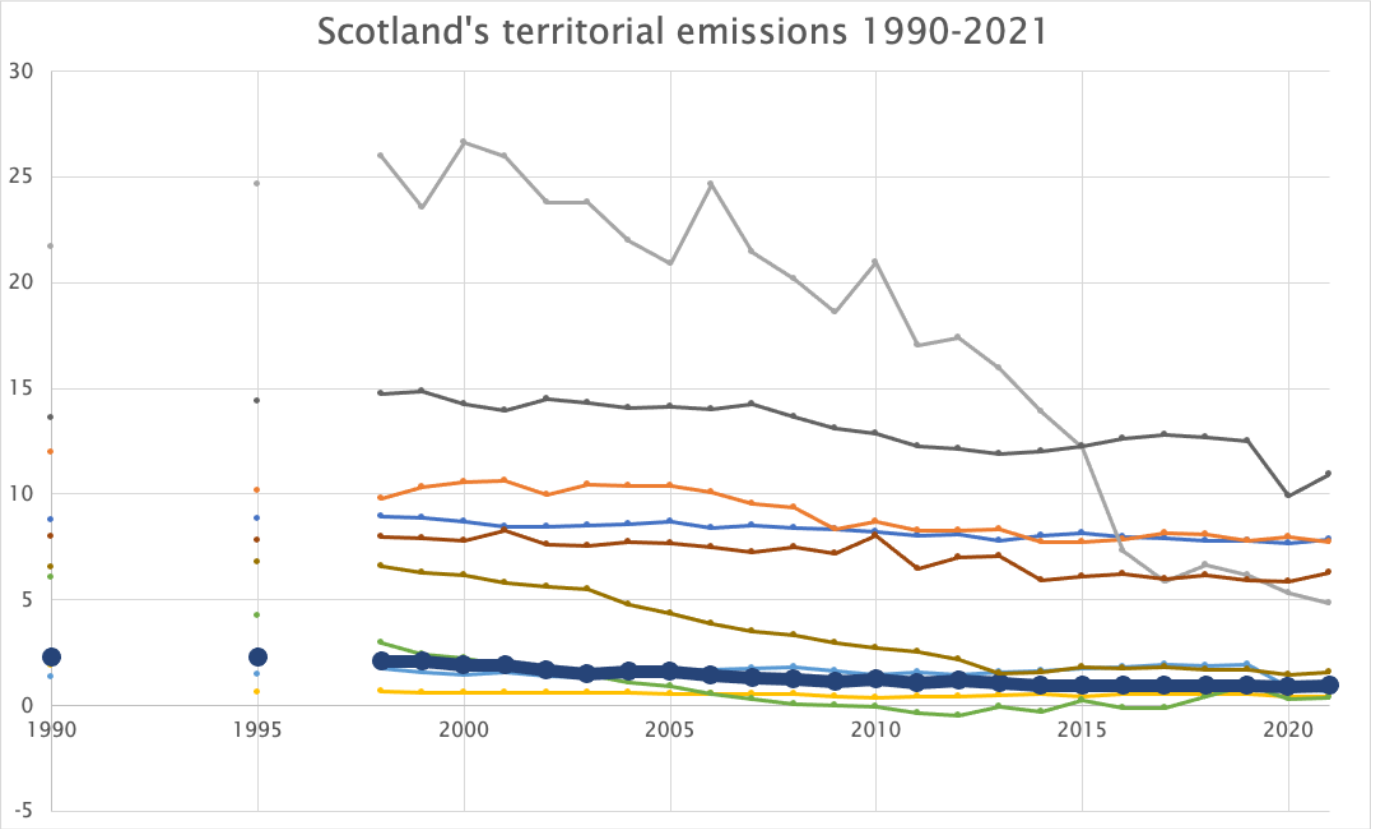

Figure 25: emissions in $MtCO_2e$ from the public sector 1990-2021, showing a fall of 60%.

The public sector's direct emissions are relatively small at 2.2% of Scotland's total emissions in 2021, but their footprint, through the impact of their procurement and other choices, is likely to be several times this amount.

The 2009 Climate Act imposed a duty on public bodies to contribute to national climate targets and to adaptation and to act sustainably. But, although reporting has improved,[269] there is little real monitoring of this obligation. The Climate Change Plan update does not have a separate chapter on the public sector.

12.1 Policies

Decarbonise the public sector

Major intensification of policy effort on decarbonising the public sector, including a Public Sector Climate Action Acceleration Fund.

☐	International	☑	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The analysis report by the Sustainable Scotland Network of the 2021/22 Public Bodies Climate Change Reports concluded: *"Although good progress has been made over the years, greater action is urgently needed across the public sector to bring steeper cuts in emissions at a much faster pace, and to assess and address climate risks through adaptation planning and action."*[270]

[269] Reporting - Public Bodies Climate Change Duties, Sustainable Scotland Network, 2023, https://sustainablescotlandnetwork.org/reports

[270] Public Bodies Climate Change Reporting Analysis Report 2021/22, Sustainable Scotland Network, 2023, https://sustainablescotlandnetwork.org/uploads/store/mediaupload/2141/file/SSN_AnalysisReport_21-22.pdf

Public services decarbonisation needs massive investment. UNISON commissioned a report on the costs of getting UK public services to net-zero which found it will need over £140 billion of government funding up to 2035.[271,272] Without significant and immediate government funding, public services that are still suffering from a decade of austerity will struggle to decarbonise. The sooner we begin, the sooner we make savings and lower costs.

The UK Government must commit sufficient funds to bring forward action. The Scottish Government should, in assessing and providing the funds required, immediately establish large scale public sector climate action accelerator funds for public bodies to deliver on specified targets this decade. These could initially be starter funds to pump prime ideas and trials, with further funding following to support positive ideas and successful trials. Good practice should be shared, with action tied also into apprenticeships and upskilling/training, for example, on installation of heat pumps or maintenance of electric vehicles.

Funding should come from some of the ideas in this report and SCCS's Financing Climate Justice report[273] and similar STUC research.[274] Planning to ensure the necessary investment is available will be essential.

An enormous amount of work across all public services is involved in this, with a focus on municipal energy and other public sector renewable energy projects, potentially in partnership with one another, along with energy efficiency across the public sector estate and decarbonising transport.

Workforce engagement is also key. A simple but vital action ministers could take would be to strongly urge public bodies and all employers to voluntarily grant facility time to green/environment trade union reps, ensuring they have similar rights to health and safety reps, making this part of Fair Work policies and practices and undertakings.

Currently, on buildings, the Heat in Buildings Strategy committed the Scottish Government to consult the Scottish public sector during 2022 *"to develop and agree a series of phased targets with increased funding available to support delivery of these targets – starting in 2024, with the most difficult buildings like hospitals being decarbonised by 2038 – for all publicly owned buildings to meet net zero emission heating requirements by 2038."* At least £200m support has been pledged for the Scottish Green Public Sector Estate Decarbonisation Scheme over the course of this parliament.[275] A range of work is underway, with targets also, for the public sector fleet, with £8m of funding in 2022/23.[276]

It is essential that plans for decarbonising the public sector fleet also take account of the needs in areas such as social care where workers, largely employed in the private and voluntary sectors, cannot themselves be expected to bear the costs for electric vehicles etc. There is already a considerable recruitment and retention challenge for these essential services and Just Transition principles must be applied.

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[271] 'This union is a green union': UNISON commits to decarbonise public services, Unison, 2022, https://www.unison.org.uk/news/article/2022/06/this-union-is-a-green-union-unison-commits-to-decarbonise-public-services/

[272] Getting to net zero in UK public services: The road to decarbonisation, Unison, 2021, https://unison-scotland.org/wp-content/uploads/Getting-to-net-zero-in-UK-public-services.pdf

[273] Financing Climate Justice - fiscal measures for climate action in a time of crisis, p.26, Stop Climate Chaos Scotland, 2022, https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

[274] Options for increasing taxes in Scotland to fund investment in public services, STUC, 2022, https://stuc.org.uk/files/Reports/Scotland_Demands_Better_Fairer_Taxes_for_a_Fairer_%20Future.pdf

[275] Heat in buildings strategy – achieving net zero emissions in Scotland's buildings, Scottish Government, 2021, https://www.gov.scot/publications/heat-buildings-strategy-achieving-net-zero-emissions-scotlands-buildings/

[276] Climate Change Plan Monitoring Reports 2023, Scottish Governement, May 2023, https://www.gov.scot/binaries/content/documents/govscot/publications/progress-report/2023/05/climate-change-monitoring-report-2023/documents/climate-change-plan-monitoring-reports-2023/climate-change-plan-monitoring-reports-2023/govscot%3Adocument/climate-change-plan-monitoring-reports-2023.pdf

Adaptation work must also be prioritised in public services. Audit Scotland highlighted the low priority it has had and the importance of adaptation in its recent report.[277] We commend joint STUC, Adaptation Scotland and UNISON Scotland practical resources, including a handbook and workbook, for tackling climate hazards and resilience in the workplace.[278]

For further information:
Getting to net zero in UK public services: The road to decarbonisation, UNISON, November 2021,
https://unison-scotland.org/wp-content/uploads/Getting-to-net-zero-in-UK-public-services.pdf
Public Bodies Climate Change Reporting Analysis Report 2021/22, Sustainable Scotland Network, 2023,
https://sustainablescotlandnetwork.org/uploads/store/mediaupload/2141/file/SSN_AnalysisReport_21-22.pdf

Establish circular public procurement practices

Require circular economy and climate obligations in procurement strategies for public bodies to help re-use choices become more mainstream within the public sector and help circular enterprises grow and expand, as well as contributing to the Just Transition.

☐	International	☐	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☐	Behaviour change		

It is essential for public bodies to take responsibility for the emissions they generate, even indirectly through their purchasing. Positively, East Renfrewshire Council recently included their scope 3 emissions – the wider impact of the Council's activities, particularly from the goods and services purchased[279] - in their annual climate change reporting under the public body duty in the 2009 Climate Act. They found that this tripled the emissions for which they took responsibility.[280]

Scottish Government monitoring[281] shows that the public sector in Scotland spent £13.3bn in 2019-2020 on goods and services, with the largest spend within Scotland, of £2.3bn, going to construction. 66% of this spend was by local authorities, 18% by central government and 11% by the NHS. 67% of public bodies provided evidence in their annual procurement reports that their regulated procurements have been carried out *"with regard to"* environmental wellbeing and climate change.

Whilst sustainability is a factor for consideration in public procurement, emphasis on sustainability has not yet been adequate to drive significant levels of mainstream circular purchasing. A shift to more circular procurement would have significant environmental and social benefits.

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[277] Government must improve climate set up, Audit Scotland, April 2023, https://www.audit-scotland.gov.uk/news/government-must-improve-climate-set-up

[278] Climate risks in the workplace: Protecting workers in a changing climate, Adaptation Scotland, 2021, https://www.adaptationscotland.org.uk/how-adapt/tools-and-resources/climate-risks-workplace-protecting-workers-changing-climate

[279] Briefing: What are Scope 3 emissions?, Carbon Trust, 2022, https://www.carbontrust.com/resources/briefing-what-are-scope-3-emissions

[280] Councils could be 'massively underestimating' their climate emissions, the Ferret, May 2022, https://theferret.scot/councils-could-massively-underestimating-climate-emissions/

[281] Report on Procurement Activity in Scotland - An overview of procurement activity 2019-20, Scottish Government, 2021, https://www.gov.scot/binaries/content/documents/govscot/publications/progress-report/2021/12/annual-report-procurement-activity-scotland-overview-procurement-activity-2019-20/documents/annual-report-procurement-activity-scotland-overview-procurement-activity-2019-20/annual-report-procurement-activity-scotland-overview-procurement-activity-2019-20/govscot%3Adocument/annual-report-procurement-activity-scotland-overview-procurement-activity-2019-20.pdf

There should be an ongoing review of public procurement practices to prioritise the principles of circularity. There should also be support for circular organisations to be better represented in bidding for and winning public tenders for example through a circular accreditation scheme which is then prioritised in procurement. A good example is in Spain where a new law mandates that 50% of public tenders relating to the collection, transport and treatment of second-hand products go to social enterprises.[282]

In addition, public procurement should be used to foster a Just Transition through purchasing goods and services from enterprises that are low carbon and sustainable, offer local social benefits and good workforce practice. There is also the possibility of diversifying supply chains to use businesses belonging to marginalised groups.

There should also be a requirement for public bodies to have to report their circular and social purchases and set targets to grow this spending.

For further information:
Policy Paper for Scotland Circular Economy Bill, Circular Communities Scotland, May 2022, https://www.circularcommunities.scot/wp-content/uploads/2022/05/Scotlands-Circular-Economy-Bill-Policy-Paper.pdf
Financing Climate Justice, https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

Divest public sector pensions

Take public sector pension investments out of fossil fuels and encourage the funds to invest in projects like social housing and renewables in Scotland.

☐	International	☑	UK Govt	☑	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

One area where the public sector could be leading by example is in relation to pensions. Most of the public sector, and many third sector organisations, have their pensions with the 11 Scottish Local Authority Pension Funds, with the Strathclyde fund being the second biggest public sector pension scheme in the UK. These funds currently have a total of around £1.2bn invested in fossil fuel companies around the world.[283] That £1.2bn could instead be invested in energy-efficient social housing, funding public transport or creating green infrastructure in Scotland, guaranteeing a good return to the pension funds and simultaneously doing social and environmental good in Scotland. The Falkirk scheme has invested £30m into social housing locally without explicitly linking it to taking money out of fossil fuels[284] and several English schemes have invested in local renewables instead of fossil fuels. In London, pension organisations are working together in a fund aiming to invest £300m into affordable housing, community regeneration, digital infrastructure and clean energy around the city.[285]

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[282] See Waste and Contaminated Soil for the Circular Economy, New Spanish law mandates 50% of tenders to social and circular enterprises, RRUSE, 2022, https://rreuse.org/new-spanish-law-mandates-50-of-tenders-to-social-and-circular-enterprises/

[283] Divesting to protect our pensions and the planet - An analysis of local government investments in coal, oil and gas, UK Divest, 2021, https://foe.scot/wp-content/uploads/2021/02/Platform-et-al-2021-Divesting-to-Protect-Our-Pensions-and-the-Planet-v2.pdf

[284] Falkirk targets social housing with £30m investment, Pensions Expert, 2015, https://www.pensions-expert.com/Investment/Falkirk-targets-social-housing-with-30m-investment?ct=true

[285] The London Fund completes £100m first close, London CIV, 2021, https://londonciv.org.uk/news/the-london-fund-completes-ps100-million-first-close-to-stimulate-development-and-enterprise-in-the-capital

Policy changes could be made in a matter of months. Even if the climate change arguments do not prevail, fossil fuel investments look increasingly volatile and risky, so there has already been a general movement among investors, first out of coal, then out of all fossil fuels.

Despite passing relatively strong climate emission legislation, the Scottish Parliament's own pension fund also has investments in fossil fuels.[286] In contrast, most Scottish universities and churches, and many NGOs, have already divested from fossil fuels.

For further information:
Divestment campaign page, FoE Scotland, 2023,
https://foe.scot/campaign/fossil-fuel-divestment/
Climate change and your pension: divestment guide, Unison, 2018,
https://www.unison.org.uk/at-work/local-government/key-issues/climate-change-pension-take-action-now/
Financing Climate Justice,
https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/FinancingClimateJustice_Report_ONLINE.pdf

Stronger planning policies to deliver emission reductions

Local authorities should strengthen their approach to Section 75 agreements with developers to leverage investment into community-owned sustainable transport solutions.

☐	International	☐	UK Govt	☐	Scottish Govt	☑	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Planning decisions and policies will need to change in order to be compatible with net zero, the sustainable transport hierarchy and the new National Planning Framework 4 (NPF4). For example, commercial or residential developments should not be approved if they lock in car dependency, fail to facilitate active travel and the use of community, public or shared transport, or are inaccessible.

Local development plans can contain clear requirements to this effect which are necessary for approval. Local authorities should have a much more ambitious and sustainable approach to Section 75 agreements with developers, in partnership with existing local Community Transport operators, or by investing in new schemes.

Local authorities should leverage Section 75 agreements to require developers to invest in sustainable transport through contributions to existing or new Community Transport operators in their local area - for example, by restricting the number of car parking spaces at the same time as building in a community-owned closed loop car club from the beginning. Every shared car is estimated to take ten private cars off the road.

Creating new Community Transport schemes can create new, local jobs and volunteering opportunities. This policy would help in tackling transport poverty and forced car ownership through the provision of local, affordable and accessible shared transport options.

The planning system can also be a vital tool in making sure we build energy-efficient new buildings and retrofit existing buildings, see the 'Decarbonising homes and non-domestic buildings - regulations' policy in the Buildings chapter.

For further information:

[286] MSP pensions funded by investments in fossil fuel companies, Friends of the Earth Scotland, 2021, https://foe.scot/press-release/msp-pensions-funded-by-investments-in-fossil-fuel-companies/

The role of local government and its cross-sectoral partners in financing and delivering a net-zero Scotland, Community Transport Association, 2022, https://ctauk.org/wp-content/uploads/2022/03/Role-of-local-government-in-delivering-net-zero-CTA-RESPONSE-FINAL.pdf

Ensure public sector commitment to being a Fair Trade Nation

Ensure that public sector bodies are contributing to Scotland's commitment to being a Fair Trade Nation.

☐	International	☐	UK Govt	☐	Scottish Govt	☑	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

Scotland became a Fair Trade Nation in 2013.

Public sector organisations should use their position to promote Fair Trade through their policies, procurement, outreach activities, workplace practices and training.

For further information:
Report into Fair Trade expenditure and policy commitments within Scotland's public sector 2019-22, Scottish Fair Trade Forum, 2022, https://www.scottishfairtradeforum.org.uk/wp-content/uploads/2022/12/Fair-Trade-Expenditure-and-Policy-Commitments-Public-Sector.pdf
Public Sector Procurement resource page, Scottish Fair Trade Forum, https://www.scottishfairtradeforum.org.uk/get-involved/business-and-procurement/ethical-procurement/

13. Marine

Scotland's marine area is huge - nearly six times our land area. The waters around Scotland provide food, transport routes, energy (fossil and renewable) and are home to a large range of animals and plants, some of them internationally important.

Collectively, Scotland's marine areas store nearly 10,000MtCO_2e. This is roughly equivalent to the total carbon stored in Scotland's land-based ecosystems like peatlands, forestry and soils. Annually, Scotland's marine areas sequester (absorb and lock up) 28.4MtCO_2e, which is approximately three times greater than the annual carbon sequestration of Scottish forestry.[287] This carbon in the marine areas is known as blue carbon.[288]

Accounting for emissions related to activities at sea, the wider 'marine carbon' balance is, therefore, vital to efforts to address climate change.

Scotland's seas are, environmentally, in a poor condition – and we are failing to meet our obligations for their restoration. Action to address marine carbon issues can also address the poor environmental condition of our seas – and vice versa. It is a potential win-win.

At present, neither blue carbon nor some aspects of wider marine emissions are included in the UN's greenhouse gas inventories. This means that they are not measured or reported in Scotland's annual emissions' report or addressed in the Climate Change Plan. A recent review

[287] Figures from SPICE briefing on Blue Carbon, 2021, https://digitalpublications.parliament.scot/ResearchBriefings/Report/2021/3/23/e8e93b3e-08b5-4209-8160-0b146bafec9d#Executive-Summary

[288] Action for Blue Carbon: protecting the marine environment to support action on climate change, SCCS, 2022, https://www.stopclimatechaos.scot/wp-content/uploads/2022/09/SCCS-marine-carbon-briefing.pdf

by NatureScot found that carbon sequestration in many marine areas is still poorly understood and thus often not quantifiable.[289]

Nevertheless, blue carbon (and its release, store and sequestration) will affect the climate whether it is 'counted' in the inventory or not. Not addressing blue carbon is delaying action that will, one day, be counted and makes meeting the Paris Agreement 1.5ºC target all the harder.

13.1 Current climate plan

The Climate Change Plan update does not have a separate section on marine issues and references a forthcoming Blue Economy Action Plan. The 2022 Blue Economy Vision for Scotland[290] aims that: *'by 2045 Scotland's shared stewardship of our marine environment supports ecosystem health, improved livelihoods, economic prosperity, social inclusion and wellbeing.'*

It lists two outcome goals on the environment:

- Scotland's marine ecosystems are healthy and functioning, with nature protected and activities managed using an ecosystem-based approach to ensure negative impacts on marine ecosystems are minimised and, where possible, reversed
- Scotland's blue economy is resilient to climate change, contributing to climate mitigation and adaptation, with marine sectors decarbonised, resource efficient and supporting Scotland's Net Zero and Nature Positive commitments

It is expected that the next Climate Change Plan will have more to say on the marine environment.

13.2 Policies

13.2.1 Protecting blue carbon

Monitor marine carbon impacts

All marine activities having an impact on marine carbon stores should be monitored and high-resolution maps of their footprint made available publicly and annually.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

In order to determine the impact of marine activities (including fishing) on marine carbon stores and habitats capable of sequestration, high resolution fishing footprint data should be collected and made publicly available.

Currently there is only partial evidence available of the footprint of bottom impacting activities (including fishing) in Scotland. For example, only trawlers longer than 12m in length are fitted with tracking devices - although a wider roll out is scheduled to commence. As these devices only provide location information once every two hours, and the data they provide is only publicly accessible via Freedom of Information requests it is not possible to determine how

[289] NatureScot Research Report 1326 - Scottish Blue Carbon - a literature review of the current evidence for Scotland's blue carbon habitats, NatureScot, 2023, https://www.nature.scot/doc/naturescot-research-report-1326-scottish-blue-carbon-literature-review-current-evidence-scotlands

[290] A Blue Economy Vision for Scotland, Scottish Government, 2022, https://www.gov.scot/publications/blue-economy-vision-scotland/pages/6/

much seabed is impacted by fishing or other industries each year, the impact on marine carbon stores specifically or any damage caused to habitats capable of sequestration.

Quantification of these impacts has been a stated objective of the Scottish Government for many years but is persistently delayed.

For further information:
Open Seas tweet, 2020,
https://twitter.com/TheOpenSeas/status/1276403094616752130?s=20
Ease the Squeeze: Scotland's fishing footprint, Open Seas, April 2023,
https://www.openseas.org.uk/news/ease-the-squeeze-scotlands-fishing-footprint/

Protect and restore marine sediments

Halt impacts on existing marine carbon stores by establishing appropriate spatial management.

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The Scottish Government should designate as Marine Protected Areas marine sediments with significant carbon sequestration value and implement spatial management measures to ensure they are protected from adverse pressures.

Scotland's sea-loch sediments are important stores of carbon. It is estimated that 115-150ktCO_2e is buried in the sediment of Scotland's 111 sea-lochs annually. This annual burial of carbon which, although efforts to confidently quantify this service are incomplete, may provide a climate regulating service on top of the sea-lochs' existing service of storing carbon.[291]

It is important to recognise the distinction between carbon sequestered in the top 10 cm of sea-loch sediment ('surficial sediment') and the more stable stores of carbon deeper in the sediment basins (which may be 100s of metres deep), which may be 100 times greater.

Surface sediments are vulnerable to disturbance and may currently be regularly impacted by fishing activity, particularly trawling (which focuses on muddy habitats such as those in sea lochs) and dredging (which focuses on sandier seabeds with lower carbon concentrations). These fisheries disturb and then re-suspend carbon stores into the water column, from where it may be re-released into the atmosphere, which is why appropriate spatial management should be used to remove or restrict the impact of these activities such that the carbon stores remain intact.[292] In selecting marine sediments for protection, account must be taken not only of the quantity of carbon that is stored in certain areas, but also of its reactivity (and hence the likelihood of it being remineralised back into the water column) and the rate at which it is continuing to be deposited.

This policy would need some co-operation with the UK Government, especially beyond 12 nautical miles.

For further information:
Assessing the potential vulnerability of sedimentary carbon stores to bottom trawling disturbance within the UK EEZ, Kirsty E. Black, Craig Smeaton, William R. Turrell and William E. N. Austin, Frontiers in Marine Scotland, August, 2022,
https://www.frontiersin.org/articles/10.3389/fmars.2022.892892/full

[291] High rates of organic carbon burial in fjord sediments globally Richard W. Smith, Thomas S. Bianchi, Mead Allison, Candida Savage & Valier Galy Nature Geoscience volume 8, pages 450–453(2015)

[292] From SCCS document 'CCP revision - SCCS proposals - single doc - FINAL 250320'

Protect and restore natural marine carbon habitats

Cease damage to all biogenic reefs, seagrass, kelp and other habitats which sequestrate carbon, and establish regeneration targets for each.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☐	Emissions reduction			☑	Behaviour change		

The Scottish Government should introduce statutory protection of biogenic reefs, maerl beds, seagrasses, kelp beds and other habitats which lock up carbon, and develop a programme of re-establishment to create new habitats.[293]

There is increasing evidence that kelp forests and seagrass beds, as found in Scottish coastal areas, are important pathways for CO_2 sequestration. NatureScot estimates that Kelp may sequestrate up to 6.6MtCO_2e/yr [294] (though only 10% of this may be incorporated in long term carbon stores).[295] Danish research indicates seagrass beds sequester 0.1MtCO_2e/km^2 in the top 25cm of associated sediment alone.[296] There are significant gaps in knowledge of the distribution of seagrass, and of the Scottish kelp and seagrass populations that have been mapped, there are data gaps regarding the density, depth, wave exposure or other features of these locations, which impact their ability to sequester carbon. Additional questions remain regarding the stability and longevity of these stores in comparison with the more stable marine sediments. There is further research evidence that these 'blue forests' if undisturbed are substantially more stable than terrestrial forests, as they can exist for millennia (whilst terrestrial forests have shorter lifespans).

Degradation of these habitats is anticipated to result in increased CO_2 emissions.[297] Conversely the expansion of these areas is expected to increase carbon sequestration – although the impact of such measures is dependent upon the fate of detritus. The University of Swansea and WWF have commenced a seagrass restoration project in Welsh inshore waters[298] which is expected to yield valuable data to inform policy, and the WWF-led Restoration Forth project in partnership with communities and organisations aims to restore seagrass meadows[299]. The rationale for protecting and expanding terrestrial forests is just as valid for 'blue forests'. Equally, it is important that the full pathways for sequestered carbon - such as the detritus from kelp plants - are protected from the kelp forests to the final locations on the seafloor where it is added to the benthic sediment.

It should be noted that seagrasses can be, and are, included in national accounting, according to the *IPCC 2013 Supplement to the 2006 Guidelines for National Greenhouse Gas Inventories: Wetlands.*

For further information:
Scotland's forgotten carbon: a national assessment of mid-latitude fjord sedimentary carbon stocks, Smeaton et al, 2017,
https://bg.copernicus.org/articles/14/5663/2017/bg-14-5663-2017.pdf

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[293] FEAST search page, Marine Scotland, 2023, https://www.marine.scotland.gov.uk/FEAST/FeatureReport.aspx#0

[294] Burrows M.T., Kamenzos N.A., Hughes D.J., Stahl H., Howe J.A. & Tett P. 2014. Assessment of carbon budgets and potential blue carbon stores in Scotland's coastal and marine environment. Scottish Natural Heritage Commissioned Report No. 761.

[295] Ibid

[296] Röhr et al., 2016

[297] A blueprint for blue carbon: toward an improved understanding of the role of vegetated coastal habitats in sequestering CO_2, McLeod at al, 2011, https://esajournals.onlinelibrary.wiley.com/doi/full/10.1890/110004

[298] Project Seagrass home page, 2023, https://www.projectseagrass.org/seagrass-ocean-rescue

[299] https://www.wwf.org.uk/scotland/restoration-forth

Re-Evaluating Scotland's Sedimentary Carbon Stocks, Scottish Government, Marine Scotland, 2020, https://data.marine.gov.scot/sites/default/files/SMFS%201102.pdf

Protect and restore saltmarsh

Cease damage to saltmarsh habitats and establish regeneration targets

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Saltmarshes, recognised as one of the most effective habitats for carbon sequestration, should be restored and their extent should be increased.

Salt marshes absorb around 770gCO_2e/m^2 per year. Due to their relatively limited extent, their overall sequestration in Scotland is only about 0.05MtCO_2e/yr; however, this could be increased by improving saltmarsh condition and increasing their extent. Recent research in England concluded that carbon accumulation on restored saltmarsh was initially rapid (average 3.8tCO_2e/ha/yr during the first 20 years), slowing to a steady rate of around 2.4tCO_2e/ha/yr thereafter. The resulting increase in carbon stocks gave an estimated total accumulation of 270tCO_2e/ha in the century following restoration. This is approximately the same as observations of a natural marsh (250tCO_2e/ha).[300] The 2010–2012 Saltmarsh Survey found that 67% of saltmarshes are in some way not in good condition. The Habitats Directive and the Water Framework Directive already require that Government avoid deterioration of saltmarshes inside SACs; however, this should now be extended to include all occurrences.

The process of managed realignment of coastal areas, to form new intertidal habitats, is being actively developed elsewhere in the UK, and there are limited, small-scale examples in Scotland (e.g. Nigg Bay). Although there is no substantive programme of expanding inventories of these habitats in the UK solely for the purpose of managing carbon budgets, there are some instances of restoration for biodiversity reasons. It should also be noted that mosaics of habitats that perform together, including not only marshes, seagrass beds and kelp beds, but also tidal flats and even urbanised areas may also yield high carbon sequestration rates.[301]

Saltmarshes can also be included in national accounting, according to the *IPCC 2013 Supplement to the 2006 Guidelines for National Greenhouse Gas Inventories: Wetlands.*

For further information:
IPCC highlights the multiple benefits of restoring wetlands to combat climate change, WWT, April 2022,
https://www.wwt.org.uk/news-and-stories/news/ipcc-highlights-the-multiple-benefits-of-restoring-wetlands-to-combat-climate-change/
Restoring the Montrose Basin Saltmarsh, Angus Council, January 2023,
https://www.angus.gov.uk/news/restoring_the_montrose_basin_saltmarsh

Maximise carbon benefits of protected areas

Ensure that protected areas include strong carbon goals in their objectives including prohibiting damaging activities.

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[300] Effect of restoration on saltmarsh carbon accumulation in Eastern England, A. Burden , A. Garbutt and C. D. Evans. Published:30 January 2019 https://doi.org/10.1098/rsbl.2018.0773

[301] Kuwae T, Hori M (2018) The future of blue carbon: addressing global environmental issues. In: Kuwae T, Hori M (eds) Blue carbon in shallow coastal ecosystems: carbon dynamics, policy, and implementation. Springer, Singapore, pp 347–373

☐	International	☑	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Highly-Protected Marine Areas (HPMAs) are included in the Bute House Agreement but, following a consultation, the Scottish Government has put them on hold.[302]

It is important that Scottish HPMAs or their equivalent meet the IUCN "fully protected" definition,[303] where no extractive or destructive activities are allowed, and all abatable impacts are minimised to best protect biodiversity and blue carbon. Scottish HPMAs must, therefore, provide a higher level of protection than other types of MPA, allowing these marine areas to recover to as natural a state as possible.

HPMAs must ensure that nature (and blue carbon) is allowed to recover. This means that HMPA management plans (and the regulations that implement them) need to be robust in the control of activities such as the development/operation of energy infrastructure, shipping, fishing, etc. HMPAs could be a useful tool in delivering the wind down of oil and gas, the well-planned delivery of marine renewables, and a more sustainable fishing sector.

Many current MPAs have little or no protection in practice and this also needs to change.

For protected areas and networks to have climate benefits, they must:

- ensure that habitats and species which are capable of sequestering carbon are not further reduced in extent. This is especially important in relation to biological blue carbon habitats given the historic decline in many of these habitats. Many are already overdue protection (either within MPAs or under the Priority Marine Features review commitment and duties). HPMAs must add something additional to those processes. For example, they could include a wider array of blue carbon habitats than is already incorporated into those processes

- create the conditions which enable a significant increase in the extent and sequestering ability of those habitats – this is necessary to meet the Bute House Agreement commitment to "recovery"

- contribute to the recovery of fish populations by protecting and increasing the number of areas which are functioning as spawning and juvenile fish grounds - thus increasing recruitment into fish populations. This will also create a greater abundance of low carbon seafood

- prevent the release of blue carbon from sediments and other blue carbon stores - this will include organic carbon stores for which the greatest concentration of carbon appears to be in muddy sea loch and seafloor sediments, kelp forests, maerl beds and saltmarsh

Applying the approaches outlined above to the selection and management of protected areas will protect important areas of blue carbon. This approach also provides a "win-win" as the recovery of these habitats will be beneficial for the Scottish Government's objectives for nature and climate change.

This policy would need some co-operation with the UK Government, especially beyond 12 nautical miles.

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[302] Why are Highly Protected Marine Areas so controversial?, BBC, June 2023, https://www.bbc.co.uk/news/uk-scotland-65456173

[303] The Graphic Guide to Marine Protected Areas, The MPA Guide, undated, https://wdpa.s3.eu-west-1.amazonaws.com/MPA_guide/TheGraphicGuidetoMPAs_foronlineviewing_lowRes.pdf

For further information:
Response to Consultation on Scottish Highly Protected Marine Areas (HPMAs), SCCS, 2023, https://www.stopclimatechaos.scot/wp-content/uploads/2023/04/SCCS-response-to-consultation-on-HPMAs.pdf

13.2.2 Fisheries and marine wildlife

Establish sustainable fisheries objectives

Establish low emission and sustainable fisheries objectives in fishery legislation and report on annual fisheries emissions.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The Scottish Government should develop and adopt climate-determined fishery regulation, to include emissions as a criterion in allocation of fishing opportunity, establish licence conditions on the basis of emissions and mandate annual emissions reporting requirements.

Global annual emissions from fuel use alone in fisheries is estimated to be 179MtCO_2e.[304] 'Heavier' forms of fishing which catch fish and shellfish by towing bottom trawls or dredges (as opposed to placing static traps on the seabed) produce disproportionately higher emissions.

Emissions reductions can be achieved in several ways. Firstly, by recovering fish stocks so that catch per unit effort increases. Secondly, by switching from fuel-inefficient to fuel-efficient forms of fishing (i.e. mobile to static gear). For instance, the fuel needed to catch and land a kilogram of Nephrops can be reduced from 9 litres to 2.2 litres by switching from trawl to creel gear. Numerous other approaches exist including replacement of diesel fuel with electric power, improved hull design and limits on vessel speed. In addition the current licensing system encourages the use of fuel-inefficient, short, wide boats. If updated to focus less on length there could be significant energy and emissions reductions.[305]

There is also evidence that depletion of marine finfish stocks may be disrupting the functioning of the marine carbon cycle, with the removal of the biological pump mechanism: it is estimated that around 18% of marine carbon fluxes, even with greatly reduced fish abundance, are driven by vertical diurnal migrations of fishes and other marine organisms.[306]

For further information:
Climate change and fishing, Marine Conservation Society, 2022, https://www.msc.org/uk/what-we-are-doing/oceans-at-risk/climate-change-and-fishing
The carbon footprint of fisheries, European Commission, https://stecf.jrc.ec.europa.eu/c/document_library/get_file?uuid=924c1ba8-94af-440d-94cb-f9cb124d2d57&groupId=12762

[304] Fuel use and greenhouse gas emissions of world fisheries 2018 Robert W. R. Parker , Julia L. Blanchard, Caleb Gardner, Bridget S. Green, Klaas Hartmann, Peter H. Tyedmers. Watson *Nature Climate Change* Vol 8.

[305] Electrifying The Fleet - more sustainable propulsion options for the small-scale fishing fleet, University of Hull, 2022, https://media.mcsuk.org/documents/ETF_Final_Report.pdf

[306] Quantifying carbon fluxes from primary production to mesopelagic fish using a simple food web model; Thomas R Anderson, Adrian P Martin, Richard S Lampitt, Clive N Trueman, Stephanie A Henson, Daniel J Mayor ICES Journal of Marine Science, Volume 76, Issue 3, May-June 2019, Pages 690–701, https://doi.org/10.1093/icesjms/fsx234

Recover fish stock to sustainable levels

Recover fish stocks to the point at which they can provide maximum sustainable yield to provide a low-emission protein source.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

The marine area is currently less productive than it has historically been. Seafood can be a protein source with a very low carbon footprint. Recovering the sea would allow greater provision of low-carbon protein and enhance climate-friendly diets.

Most forms of seafood provide low-carbon forms of protein, some perform even better than pulses. That said, intense fuel use means that seafood products caught in dredge and trawl fisheries do not do so well – notably trawled Nephrops perform less well than even beef.

Maximum Sustainable Yield (MSY) represents the maximum amount of each fish stock that can be caught each year without negatively impacting on future years. Under the Common Fisheries Policy, Fisheries Strategy and National Marine Plan, the Scottish Government had an obligation to manage all its fisheries in line with this concept by 2020. Sadly, the UK (and the rest of EU) missed this target badly, with many stocks yet to be even properly assessed. However, this does not mean the target should be forgotten and certainly, as other sources of protein, especially red meat, are coming under increased scrutiny, seafood will become a more important part of a healthy and climate-friendly diet. The Scottish Government should aim to rebuild stocks to the point at which they are delivering the highest yield, thus contributing to the decarbonisation of our food industries and diets.

Because MSY does not take account of broader environmental sustainability (monocultures can deliver maximum yield but at great cost to the ecosystem), this target should be subject to an additional caveat of seeking the highest yield with the least environmental impact.

For further information:
Our seas will change, what should we do about it?, Open Seas, 2019,
https://www.openseas.org.uk/news/our-seas-will-change-what-should-we-do-about-it/

Protect and restore marine wildlife

Create a framework for protection and restoration which creates healthy marine ecosystems which absorb carbon.

☐	International	☐	UK Govt	☑	Scottish Govt	☐	Local Authorities
☑	Emissions reduction			☑	Behaviour change		

Scottish Government policies that focus on habitats and fisheries, should be complemented by wider marine habitat and species restoration policies. All plants and animals, from the smallest plankton to the largest blue whale, are carbon-based and increasing their populations will contribute to increasing the store of carbon in the oceans. In addition, a fully functioning marine ecosystem, where all species' populations are restored will 'leak' less carbon, as natural systems will be more likely to cause it to be recycled.

This is another example of where actions to address the climate crisis and those related to biodiversity are complementary. While an ecosystem-based approach is important, particular attention should be paid to 'indicator species' (often the 'apex predators') such as seabirds and cetaceans.

For further information:
Delivering Ocean Recovery to Achieve the COP26 Goals, Scottish Environment LINK, 2021, https://www.scotlink.org/ocean-recovery-cop26/
The value of restored UK seas, WWF, 2020, https://www.wwf.org.uk/ocean-heroes/uk-seas
Whales in the carbon cycle: can recovery remove carbon dioxide?, Pearson et al, Trends in Ecology and Evolution, March 2023, https://www.sciencedirect.com/science/article/pii/S0169534722002798
The Role of Whales in the Carbon Cycle, AZO Cleantech, 2022, https://www.azocleantech.com/news.aspx?newsID=32724
Whales could be key to reducing carbon dioxide, University of Hawai'i News, January 2023, https://www.hawaii.edu/news/2023/01/24/whales-carbon-dioxide/

14. Next Steps

This document was developed at a critical time for the achievement of climate change targets, with a clear political recognition of the need for urgent action, but not enough clarity about what should be done, by whom, and how it should be funded and supported.

This period from 2023 through to 2027 will largely determine whether we meet our 2030 targets and beyond. We need to be laying the groundwork for every sector of Scottish society to begin to turn a corner and ratchet down their emissions. We need to highlight the key areas of current capital investment required to build the framework for society and industry to transition. We need to flag up the likely jobs and skills shortages which are obstructing progress. And we need to see a renewed focus on meaningful action; not rhetoric and empty net zero commitments. All of this must be achieved in a way which is genuinely just.

Done well, and actioned urgently, will allow Scotland to demonstrate moral, practical and academic leadership, using that leadership to influence others around the world to follow suit. Without all of this, our targets will become increasingly unachievable, and sector after sector will fail to deliver against its obligations. In addition, businesses and organisations will increasingly struggle to operate successfully as they fall foul of ratcheting environmental requirements or are sued for non-compliance.

This collection of ideas has been a huge undertaking, tackled in the spirit of an emergency. It has already helped to galvanise and enthuse a large swathe of the NGO sector, and attempts to bring as many solutions into one place as possible to get the broadest possible support from the whole of the NGO community; including unions and faith groups through to environment groups, humanitarian agencies, health bodies and everyone in between. We will continue to work to grow this broad support. This is vital, as without consistency and clarity of solutions, Scotland will struggle to succeed.

This clarity not only drives credible action but it can also drive investment and innovation over the longer term. Otherwise we risk well intentioned actions frantically spinning in isolation, but failing to join up and therefore failing to create momentum.

The next steps for this work are therefore vital. The collection of ideas is a living breathing document, not a door stop. A clear advocacy plan will encourage its political adoption. We will engage members of the coalition and wider society to win public and popular support for the proposed actions. Politicians cannot do it all on their own and will not do it unless they feel that there is public backing for many of these measures, irrespective of them being 'the right thing to do'. A long term public engagement strategy will be developed. We will identify gaps in consensus and understanding of the appropriate solutions and these will be fed into a research framework to seek academic support and funding to further our knowledge and critical gap sectors.

We will initiate a conversation on the back of this collection of ideas which looks at the facilitating legislation and frameworks that are needed to achieve these policies. This document is all about joining up efforts more effectively, building a robust future in every sector, spotlighting the best and most successful action, encouraging and facilitating each sector to make a difference and helping to guide investment and innovation

This collection of ideas should therefore be viewed as the urgent continuation of a process and should underpin the efforts across society, and within the NGO community, for the next five to ten years.

Abbreviations

CAFS & CAFS2	Cleaner Air for Scotland strategies of the Scottish Government
CCC	Climate Change Committee
CCPu	the Climate Plan Update, published in 2020. A new Climate Change Plan will be consulted on in late 2023.
CCS & CCUS	Carbon capture and storage and Carbon capture, utilisation and storage
CERG	Climate Emergency Response Group
CNPA	Cairngorms National Park Authority
COP	Conference of the Parties, for instance the annual UN climate talks
COSLA	the Convention of Scottish Local Authorities, representing Scotland's councils
CPD	Continuing Professional Development
EC	European Commission
ECJ	European Court of Justice
ECT	Environmental Court of Tribunal
ECT	Energy Charter Treaty
EEA	European Environment Agency
EIA	Environmental Impact Assessment
EqIA	An Equality Impact Assessment
ERCS	Environmental Rights Centre for Scotland
ESS	Environmental Standards Scotland
EU	European Union
FFNPT	Fossil Fuel Non-Proliferation Treaty
ICO	Information Commissioner's Office
IEPAW	Interim Environmental Protection Assessor for Wales
JNCC	Joint Nature Conservation Committee
LLTNPA	Loch Lomond and the Trossachs National Park Authority
$MtCO_2e$	millions of tonnes of carbon dioxide equivalent
NETs	Negative Emission Technologies
NGO	Non-governmental organisation
NPF	the National Performance Framework is a set of key Scottish Government indicators of how Scotland is performing.
NPF4	National Planning Framework 4 sets out the Scottish Government's priorities and policies for the planning system
NSET	National Strategy for Economic Transformation
NZET	Net Zero, Energy and Transport Committee of the Scottish Parliament
OEP	Office for Environmental Protection
PCSD	Policy Coherence for Sustainable Development
PfG	Programme for Government, the Scottish Government's annual statement of priorities
SDGs	UN Sustainable Development Goals
SEPA	Scottish Environmental Protection Agency
SHRC	Scottish Human Rights Commission
SME	Small and Medium Enterprises
SPICe	the Scottish Parliament Information Centre
SSSI	Site of Special Scientific Interest
SSN	Sustainable Scotland Network
UK ETS	UK Emissions Trading Scheme
ZWS	Zero Waste Scotland

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Richard helped set up Transform Scotland and create Stop Climate Chaos Scotland, and chaired the Edinburgh Community Solar Co-op. He was on the Board of the Scottish Environment Protection Agency for 8 years and is currently on the Board of Environmental Standards Scotland.

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Climate Manifesto
Policies to deliver action and justice
Stop Climate Chaos Scotland

A collection of policies created with input from Stop Climate Chaos Scotland's members and associated environmental, development and civil society groups.

Stop Climate Chaos Scotland's members:

This is the final draft of version 1.0, to be published in September 2023.

For further information: stopclimatechaos.scot